

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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income was added to the funds, while the general income was increased. 349 policies, averaging £35 each, were issued.

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H. D. DAVENPORT, Secretary.

### VISITS TO THE MANCHESTER EXHIBITIONS—NO. III.

We concluded our last notice on the Manchester Exhibitions of Appliances for the Economy of Labour by describing some machines applicable to the ventilation of mines, and equally useful in forges. The close relation existing between the miners' profession and the forge has induced us to give a more detailed account of the exhibited machinery pertaining to forge work than would at first sight appear consistent with the avowed purpose of these present reports; the reason just enumerated will, we think, fully justify us in taking up such exhibits in our reports.

Amongst this class of machinery the steam-hammer, of course, takes a prominent lead. In no wise undervaluing the great services which the modern steam-hammer has rendered to the immense demand for heavy forgings, and the novel methods in treating the produce of the furnace when malleable by the steam-hammer, still it will be in the recollection of many of our readers that the prejudice which existed a few years ago in favour of the old belly-helve was so strong as to lead to the complete exclusion of the steam-hammer. We have at this moment some particular ironworks in view which at the time we are alluding to had been newly erected, and where this opinion against any innovation was strongly rooted. It was easy to discern that the leading men of this establishment had fixed their principles by inheritance, defending them with all the strength and prejudice as being born heir to them, so missing many excellent things for reasons that they would follow the beaten track. Engineers, too, at the time we are referring to, looked upon the helle, or tilt hammer, as the only valuable economical expedient which steam had given to human labour in forging, and so, perhaps, it is little surprising that intelligent men in those days should have disregarded the deficiencies of the helle as they presented themselves in their inability to give a flat blow to a large piece of work, the portion of the metal nearest the fulcrum being unduly compressed, whilst that which was furthest away scarcely received any blow, or that these men thought the impracticability of controlling the blow (which was consequently always of the same intensity) sufficient reason for finding a substitute in a novel mode free from such defects. Subsequently, however, a hammer was admitted at the works referred to, others were introduced, and the once so cherished belly-helle was altogether abandoned.

If it is, perhaps, owing to these circumstances which led to the invention of the steam-hammer, still the latter cannot be called an economical machine in giving out force in proportion to the power expended to produce it. With the tilt hammer a blow was given with every revolution of the cam, and the intensity of the blow depended upon the height to which the head of the hammer was raised; consequently this blow had to perform as many units of work in its effect as was originally given to it. In our modern steam-hammer, to get a stroke of 4 ft. to forge a shaft or ingot 12 in. diameter, the full length of the stroke has to be used, while the blow is only equal to a 3-ft. fall—that is to say, we thus sustain a direct loss of 25 per cent. in the example just quoted. Again, wherever steam-hammers are applied some loss of power is entailed in conducting the motive power from the boiler to the machine in question, which varies more or less according to the distance of the steam circuit, and the care which is taken in rendering the steam-pipes as little conductive as possible. Moreover, the application of the steam-hammer in its economical working involves a full knowledge of the procreation and use of steam, the laws by which it is governed, the principle of expansion, the nature and force of dry and saturated steam, and a knowledge of the extent to which it can be used with safety, economy, and effect. We are, however, far from perfect in such enquiries, and although it is a source of pride to bear witness to the discoveries and inventions that have been effected in our lifetime in every branch of industry, the preceding reflections will show us that we must not run off with the idea of being the only improvers or inventors, or of having, so to speak, reached the limit of our mechanical tether.

With these imperfections of the steam-hammer before us, the attempt to supplant the steam-hammer by other machinery is, we think, a sign of the period in the mechanical world. The same idea seems to be discernible in the exhibition of appliances for the economy of human labour, for there we find keen competitors to the steam-hammer ranged side by side to it. The steam-hammers are represented by the firms of Messrs. Massey, Thwaites and Carbutt, Davis and Primrose, &c.; but as these hammers have been repeatedly discussed, we need not here enter into fuller details concerning them. Messrs. Tangye Brothers, however, exhibit a small steam-hammer, which we will briefly describe, since they state it to be a new tool. The Warsop light forging hammer, as it is called, is intended to occupy an intermediate position between the ordinary steam-hammer and the sledge-hammer of the blacksmith. We should be inclined to take it as a small working model of the ordinary steam-hammer, but it is made in three different forms—bridge pattern, open jaw and compound pattern, with several cylinders side by side for bolt forgings. It consists of a small steam-cylinder attached to a frame holding an anvil. The balanced steam-valve can be adjusted to any desired cut-off, and the action of this valve, we are informed, is so exact as not to allow the hammer to strike the anvil if work was suddenly removed while the machine was in motion. A foot-treadle placed at the base of the hammer enables the workman to control the steam while both hands are employed. The high speed at which this light forging hammer may be run—800 revolutions per minute—will, no doubt, enable it to do as much work at one heat as may be done at three or four heats by hand, and the effect of the light rapid blow may make neater and better forgings than those made by the sledge-hammer and swage, but it is evident that it will never entirely replace the latter, for the simple reason that even at the present day comparatively few blacksmiths have steam at their disposal in their shops. Messrs. Tangye Brothers may, nevertheless, have found it a very useful accessory to the workshop in the light forgings of their hand tools, since they claim that it will draw out a bar with steam of 8 lbs. per square inch on the piston.

We now come to the competitors of the steam-hammer, and these are exhibited by Messrs. W. Collier and Co., as makers, and Messrs. Rees and Gledhill as agents. The first exhibit the Anglo-American dead-blow hammer, and the second Sholl's patent pneumatic-power

hammer. The Anglo-American hammer, as the name implies, is of American origin, but in its present construction little else than the fundamental idea has been retained by its English makers. The chief novelty in this hammer is the intervention of a semi-circular spring between the ram and the crank-pin, to both of which the spring is connected. When the hammer is set in motion the ram is carried upwards by the crank-pin, the spring becomes compressed, and these combined motions greatly increase the upward motion of the ram. Whilst the ram is in this position the crank-pin passes the top centre, causing the ram to be met by the spring, and thrown into it, thus again compressing the spring. The tendency of the spring to assume its normal shape, combined with the downward movement of the crank-pin gives the ram great downward velocity; thus when these hammers are working at full speed the ram travels through about twice the distance of the crank-pin stroke, and the intensity of the blow from these hammers entirely depends on the velocity at which they are driven. A foot, or foot and hand, treadle enables the workman to regulate either the speed or force of the blow from the lightest touch to the heaviest blow, from the slowest to the quickest speed, without extra assistance, whilst forging. It is claimed that the working capacity of one of these hammers with a 100-lbs. ram will equal a 2*cwt.* double-acting steam-hammer. Amongst the advantages which are likewise claimed for these hammers we may mention that they can be fixed in any position where there is a driving-shaft, being quite independent of any steam supply, and worked by strap. As this belt is always running, no time need be lost in getting the hammer to work, nor is any packing required in connection with the hammer, as is the case with ordinary power hammers, where a cushion of air, steam, or other buffers are used. Messrs. W. Collier and Co. are now engaged in slightly altering the working arrangement of this hammer for ore-crushing purposes.

In Sholl's pneumatic power-hammer the ram likewise works in a vertical slide, and is also connected indirectly with a crank-pin fixed to a rotating disc. As the name implies, an air-cushion is substituted for the before-mentioned spring to deaden the shock at each stroke-end. We purpose shortly to bring this hammer before the notice of our readers, and may, therefore, defer further notice till then, merely now remarking that stampers are also constructed after the same principle for crushing gold quartz and tin ore from one head up to four in one trough or coffer, and these stamps are guaranteed to pulverise from 10 tons up to 24 tons of ordinary ore per 24 hours. The description of both these hammers, superseding, in many respects, the steam-hammer, will, we think, show the correctness of our previous assertion.

In the class of machinery applicable to forge and general smithy work Messrs. Handyside and Co. show their portable forges, and Messrs. Thwaites and Carbutt further exhibit several of Roots's blowers; but as these specialities are already well known to the engineering public, we need not further comment upon them.

We may now proceed to speak of the stone-dressing and cutting-machines. Looking over these exhibits, we do not notice anything new; but as this is the most important class of machinery exhibited (as far as we are concerned), we will give a short *résumé* of this sub-division. Bohlken's improved patent earth-borers are shown by Messrs. M. Selig, jun., and Co., and it is claimed for these borers that they combine all the advantages of the shovel, spade, and post-spoon, being specially adapted for boring holes for telegraph posts, fences, posts, and scaffolds, or for laying gas and water pipes underground, for planting trees or boring the holes of tube wells, or in investigating the ground, &c. They are made so as to be able to penetrate the hardest ground, and when boring lift the dirt out of the hole without the use of spades, spoons, or shears. Although small stones in the ground will lift themselves through the threads of the borer, still larger ones will, of course, have to be removed by other means wherever they present themselves. As an example of the capabilities of these borers, it is stated that last summer one man bored 102 holes per day in extremely hard ground. The depth of these holes has, however, not been given us. H. R. Marsden, of Leeds, exhibits one of his improved stone-breakers, with screening apparatus, for reducing hard and refractory substances, such as fossils, flints, phosphates, ores, rocks, &c., and for making fine concrete gravels for walks.

The next two catalogued exhibits—a safety fuse for conveying fire to the charge in blasting rocks, shown by Brickford, Smith, and Co., and the patent Abyssinian tube-wells, exhibited by Le Grande and Sutcliffe, we could not find anywhere. It appears to us that the committee of the Society for the Promotion of Scientific Industry, who had the cataloguing and grouping of the exhibition under their charge, have discharged their duties in a very vague manner for not only are many of the exhibits not marked at all with the official catalogue number, but a more awkward manner in which the exhibits corresponding to the catalogue have to be found by the visitor could not well be imagined. Again, the grouping of the different appliances is not what it might reasonably be expected to represent; in fact, the order which seems to us to have been observed in this respect comes little short of *pelé-méle*. Whether a pump (which, as its own circular has it), adapted to house, farm, and garden purposes, belongs to the class of boiler maker's tools, or to punching, riveting, drilling, plate planing, and welding machinery, or to such like machinery, we leave the reader to judge, yet such the society's catalogue would have us believe. Again, why the forementioned light forging hammer, which is obviously a steam-hammer adapted for the blacksmith, should be grouped in the same category, whereas the society reserves a special class for steam-hammers and machines applicable to forge and general smith work, is likewise a mystery to us. To mention another example, we find an air-compressor and steam-engine grouped amongst Class VII., which is reserved to stone-dressing and cutting machines, drills, and rock-machines; this air-compressing engine, although it becomes in many instances an adjunct to rock-boring or stone-cutting machinery, cannot be said to be either a stone-dressing or cutting-machine, nor a rock-boring machine, for we might just as well call a steam-engine a power-loom, because it serves to drive it. We have cited these discrepancies in order to show that our reason of expressing ourselves dissatisfied with the committee's labours are well-founded, and perhaps the committee will in future take our advice to be more careful in the cataloguing and grouping of the various exhibits.

In the Warsop rock, which we notice next, a close imitation of the process of hand drilling has been aimed at, with the difference that the hammer is attached to the piston-rod of a small steam or compressed air-engine, capable of striking 1000 blows per minute. Its distinguishable feature is in its having the drilling chisel detached from the piston-rod of the machine, so that the chisel remains always with its point against the stone, while it is rapidly struck by a small steam or air propelled hammer. The cylinder has only two moving parts—the piston and the valve—which latter cuts off close to the inside of the cylinder, to allow of no loss in the parts. A common flat boring chisel is in most cases all that is required to drill with, and for tunnelling and heading the Warsop drill is mounted as a pillar or cross-bar, and the chisel is maintained against the rock by means of a counterbalance weight. It is claimed that this method of applying the power allows the drill to be worked at 16 lbs. pressure over soft ground with good results, and that in the hardest rocks the steam or air used to propel the hammer need not exceed 20 lbs. per square inch. As the chisel is, so to speak, stationary in the hole, the tool may be entirely removed from a half-finished hole and brought back to finish it without the slightest detriment to the work done, consequently the shifting of the cylinder while at work will not affect the quality of the work. When drilling vertically the whole weight of the apparatus rests on the chisel. Another Warsop drill, exhibited by Messrs. Tangye Brothers, is the smallest size of rock-borers, for making holes not more than 1 in. in diameter. Its length is 7 in., its weight 30 lbs., and it is designed either for use in lead and other mines where it is impossible to use a larger tool, or for splitting up large blocks of granite. When at work the workman has merely to hold it in the required position, its own weight being sufficient to resist the recoil of the blow. The point of the chisel is cleared from cuttings by a light jet of compressed air, so that the tool need not be withdrawn until the hole is finished, unless in case of re-sharpening being necessary.

Messrs. Le Gros Silva and Company exhibit the Ingersoll Rock-Drill, in which the feed is adjusted so as to act mechanically at every stroke of the piston, providing the rock will allow the piston to pass beyond its regular stroke and regulate the feed. The full stroke of the piston is spent as the bit is driven against the rock, and at this moment acts upon the feeding arrangement. The bit is in the form of an X, and made of octagon steel. By the arrangement of the feed, it is claimed that the drill, whether passing through hard or soft rock, or strata full of faults and irregularities, will be regularly and effectively fed. The drill is constructed for rock-work in general, and may be driven by compressed air or steam. Its chief practical feature is in the aforesaid automatic feed, and the work of one of these drills is said to equal that of 18 hand-borers. The Ingersoll drill has been much used in America and received during three consecutive years prizes at the exhibitions of the American Institute. As fitted up here, it cuts at the rate of 4 in. per minute, making a complete circle in eight blows upon a solid block of granite. This is the first time the Ingersoll drill is exhibited by Messrs. Le Gros Silva and Company in this country.

The exhibits in this class of machinery are closed by a rock-boring machine, used for tunnelling, or subaqueous operations, prospecting for minerals, &c., and belongs to the Diamond Rock-boring Company.

We may now notice some weighing machines exhibited by the Liverpool firm of Messrs. Henry Pooley and Son. The first of these is described as a self-indicating turn-table weighing machine, for use on pit banks. In this machine the tubs of coal may be accurately weighed as fast as they can be run on and off the turn-table; and its arrangement allows the tubs to be run on straight from the trams, and from thence in any direction required. A dial on a self-indicating head at once indicates the exact weight of the coal, the average weight of the tubs being tared off on a steelyard, which, by means of a moveable weight, can be made to correspond to any sized tubs. We are informed that this machine has been specially designed to meet the requirements of the weighing clauses in the Mines Regulation Act. Amongst other exhibits of the same firm we may mention their platform weighing-machine for collieries, forges, and blast-furnaces, which is made extremely strong, to resist the rough usage to which such machinery is exposed. With this view of lessening the concussions of the heavy furnace bars, an arrangement of india-rubber composition cushions are placed underneath the weighing-table, so that the jar of passing loads is taken off the knife edges by means of this spring platform.

Amongst the same catalogued class the Hydraulic Engineering Company figure with a selection of their specialities, which it is not exactly our province to detail. Brotherhood's patent hydraulic three-cylinder engines are exhibited by them as applied to lifting or winding, and are now tolerably well known in this country. The special features of these engines are that no dead centres occur, thereby enabling them to start in any position, that the use of the fly-wheel is dispensed with, still securing a uniform speed to the shaft, and that as the connecting-rods are always in compression the crank-pin receives no shock at each stroke end. We may further mention that there are no parts exposed to the dust, or glands required in these engines, which we understand are being made to drive rolls direct, or used for other purposes.

It may, perhaps, appear trivial if we conclude this notice with commenting on certain exhibits for the instruction and employment of children. We confess we are pleased with the idea the Society for the Promotion of Scientific Industry has had in reserving a special class for mechanical and scientific toys. It is certainly a bold step in such an undertaking as theirs, but it is one taken in the right direction. The calling of man in actual life is mostly regulated by the impressions received in his childhood. If a child takes to a certain study, it is almost certain that he will make that particular study his hobby through life. He may shift, and have temporary changes of occupation, for cross-currents may check him in carrying out his choice selections for a time, but let him be thrown ever so far out of his road, and, Indian weapon-like, he will not rest until he is once more on his natural track. Of course we know very well there are exceptions, as in every other case, but the child's character is the nucleus of the man's, or as Milton puts it, "The childhood shows the man, as morning shows the day." Another noted author says "Models are, therefore, of every importance in moulding the nature of the child; and if we would have fine characters, we must necessarily present before them fine models. . . . The impressions then made, however slight they may seem, are never effaced. The ideas then implanted in the mind are like seeds dropped into the ground, which lie there, and germinate for a time, afterwards springing up in acts, and thoughts, and habits."

The practical truth of these words are clearly manifested by the present period. An education cry for the young has gone through the length and breadth of the land, and, as a result, English compulsory education of the young has risen up in our free constitution. The feeling has even found a loop-hole in the columns of the *Mining Journal*, for our readers will be aware of the recent articles on practical mining education [*Mining Journal*, April 10 and 17, 1875] which have appeared in these columns. We have already alluded to one discernible feature of the exhibition corresponding to the signs of the period, and we think the catalogued class of mechanical and scientific toys and apparatus for the instruction of children offers another reflex of the present day. The surrounding of children with scientific toys suitable to their age cannot but create an inclination in the child's mind to the object of these toys, at a time, too, when the mind is most open to impressions and ready to be kindled by the first spark that falls into it. The later influence which such impressions must have during the training of the child to manhood are obvious, and, from the foregoing remarks, we think the importance of such children's exhibits cannot be too strongly supported and advocated. Thus, we find among the scientific toys of the Cheetah Hill exhibition the first principles of the mining profession elucidated by means of suitable toys. In a strong cardboard box, for instance, we detect a collection of specimen minerals, accompanied with descriptive treatise explaining their uses.

In another box we find a collection of six metals and their ores, also with a descriptive treatise. In a third exhibit we have a collection of rocks, accompanied by an introductory work entitled "Outlines of Geology," to which is appended a complete synopsis

of the British strata. Another of these exhibits gives us an account of the mineral substances used in the arts and manufactures, whilst another pourtrays a visit to the mines. These toy exhibits are, however, so numerous and diverse in their subject that we cannot pretend to enumerate them all, but what we have just stated will bear out our views that such toys are well worth the attention of parents, with whom the early education of their children is of vital importance.

[In our next notice we intend to pass on to the other Manchester mechanical and industrial exhibition now being held at the Royal Pomona Palace.]

#### THE HALF-YEAR—ITS REVELATIONS AS TO THE METAL TRADE.

We have arrived at the period of the year which, next to Christmas, is considered most important to traders and producers of all kinds. It is the half-yearly stock-taking, balancing up, and forming a judgment as to the contraction or extension of business. At the end of the half-year bankers make up their balances, and are most anxious to have large ones, calling in their money from all quarters. This periodical work has been nearly accomplished, and money which was made temporarily dearer is now easy. What is said of the joint-stock banks is true of the discount houses, of the mercantile establishments, and of the great trades in the iron, coal, and manufacturing districts. The Government distributes its dividends on the Funds, the joint-stock banks declare their losses or gains, and this year it has been the former, and some of the railway companies have begun to distribute their dividends, and the rest are totting up their traffic returns, expenditure, law costs, &c., to see what dividends they can make. Surely mining companies, although not following the general course and fashions of distribution, have thoughts awakened by the occasion and by the busy half-year movements that commence soon after the end of June, and do not end until early in August.

Whatever the peculiarity in the plans of account keeping and distributions of profits on the part of the dividend-paying mining companies, the non-dividend paying will be pleased to have their attention called to the half-year's history of the products of their mines, and the more fortunate companies will find such a study beneficial. We, therefore, make up our half-year's usual survey of the commerce in the superior metals, as it exercises decisive influence on mines and mining. The imports of copper ore for the half-year were of the value of 322,276*l.*, rather less than in the first-half of 1874, and very much less than in 1873, when the value was 458,800*l.* The value of regulus was 759,378*l.*, against only 500,000*l.* last year. And the declared value of unwrought or part wrought was 2,012,707*l.*, against 1,793,817*l.* in the corresponding period of the previous year, and just 1,500,000*l.* in that of 1873, making a total of copper imports 3,904,361*l.*, exceeding those of previous years for some time. The imports of copper for June were considerable. Ore amounted in declared value to 90,546*l.* against 80,502*l.* in June, 1874, and 75,763*l.* in the same month of 1873. The value of regulus for June was 83,119*l.*, about 10,000*l.* less than in June 1874, and 10,000*l.* more than in June, 1873. Copper, wrought or part wrought, was imported to the extent of 325,933*l.*, a larger amount than in the same month of either of the preceding years, and rather justifying the opinion that this import is quietly and steadily increasing. At present the trade in copper is not so active as other miners or metal merchants could wish, but, nevertheless, they ought to be cheerful and thankful.

There is a very strong feeling in Cornwall and Devon, and also in Ireland, that all the imports of copper are injurious to British production. This is not so, for of the copper unwrought or part wrought imported by us in the month of June alone, we re-exported to the extent of 113,949*l.*, and for the half-year 602,951*l.* These are large amounts, but not, we are sorry to say, so large as last year; there have been, however, the merchants' profit and the carriers' profit on every pound weight of this re-exported copper. The exports of British copper for the half-year have been very considerable. Of ingots, cakes, and slabs the declared value was 441,539*l.*, slightly more than in the first half of last year. For the month it was 82,763*l.*, a falling off of about 17,000*l.* from the previous June. Had last month showed favourably in this department of the copper trade the half-year's return would have been excellent; it is, however, favourable, as there is an increase. The value of wrought or manufactured copper of British and Irish production sent away in the half-year was 573,179*l.*, about 20,000*l.* more than in the first half of last year, and 52,000*l.* more than in that of the year before. So that the continued outcry about a decline in the copper trade had no foundation, but was an instance of the croaking so common to merchants and farmers all over the world time immemorial. It is a reply also to the miners, including shareholders in mines, who complained that there was less copper production because there was less call for it. In truth, there was more copper mined and more sold. In the month of June the exports were worth 94,873*l.*, about 4000*l.* less than in June 1874, and close upon 25,000*l.* more than in the corresponding month of 1873. One of our exports connected with copper and zinc, in the same official table, is yellow sheathing. The value of this for the half-year was 553,874*l.*, 45,000*l.* less (always using round numbers) than in the corresponding period last year, and 134,000*l.* more than in the first half of the year before, so that although the export is something less than the previous year, owing to the quietness of trade in the countries which buy from us, the gain upon the previous year is so great as to show that this is an advancing trade. During the month of June 100,000*l.* worth was sent abroad, which is more than the month's proportion, and rather less than in June twelve months, but nearly twice as much as the year before that. The export of mixed or yellow metal is a rapidly growing one, and is destined to grow much larger. The navies of all countries are increasing except the United States, where there is as much objection to a standing navy as a standing army, and there is no maritime nation which produces it to any noticeable extent, and none can offer as good a quality at as low a price as we can. We may venture to predict, and are supported in our opinion by some of the most experienced men on the Tyne, that it is certain before long that this export will alone equal in value the whole of our present copper exports, which for the half-year now ended was of the value of 1,568,000*l.* being a direct export of rather more than 3,000,000*l.* a year in British copper, and a direct total trade export of British copper, and of foreign and import, taking an average of three years, of between 5,000,000*l.* and 6,000,000*l.* The value would be higher, but there were lower prices in some portions of this commerce; the quantities, however, have shown satisfactory progress.

We have in the foregoing remarks confined our attention to the direct trade. The indirect trade is immense, copper entering largely into the manufacture of locomotives, steam-engines, and other machinery, in the form of brass chiefly, but extensively also of pure copper. There is also a demand for it in connection with ships, not sheathing merely, but for internal fittings, and these, except exported for the marine of other countries, do not appear in the returns. It is impossible to give reliable statistics of the value of exports in which copper holds a prominent or subordinate place as the case may be, but, *ex uno discimus*, take arms and ammunition. Bronze has not yet been displaced by steel cannon, especially in Turkey, South America, the Iberian Peninsula, China, Mexico, Persia, &c. Fire-arms have a portion of brass. The ammunition for small arms, such as cartridges, contains a large portion of copper, and copper caps for small arms, &c. Under the head of arms and ammunition the value of exports for the half-year amounts to the large sum of 1,029,803*l.* This trade is increasing rapidly; there are no imports connected with it, and there are changes going forward in the armaments of all nations, "arms of precision" are being adopted even amongst the least skilful of military nations, and although France, Germany, and Belgium will give part of the supply, it will mainly come from England. Thus, from whatever point of view we take it, the commerce in copper and its products increases and promises a large prosperity. It is curious, interesting, and instructive to observe the course which this trade takes. Our imports are mainly from Chili, and the distance and the capricious character of the charters gives the import trade a speculative character, and affects even the home market in this sense. Spain is next as to ore, but Australia in wrought or part wrought. Exports of imported copper are made

chiefly to Europe. British copper has been sent last half-year in ingots, cakes, or slabs chiefly to France, and next to Germany, but last month, while Germany maintained the average, France fell seriously away; this arose from heavy stocks having been accumulated. Belgium, Holland, and India are our only other customers of consequence. The commerce in this form of the metal with the United States rapidly declines, and threatens soon to be extinct. In the first six months of 1873 the Union took 210,000*l.* worth; in that of 1874, 1000*l.*; and the last half-year only 8*l.* She now finds her supplies in North America. Our best customer for manufactured copper by far is British India, and the next is Russia. Turkey, Egypt, Italy, and Holland are large importers hence. The United States trade in wrought copper, as in the qualities just named, is fast fading away. During the half-year she took 500*l.*, and last month none. It would appear that the metal trade with the United States, except for steam-engines, locomotives, tools, hardware, and cutlery will cease; the supplies of ores, wrought copper, and other metals sufficing within herself. Our trade in tin has not been so prosperous as in copper; although Cornish tin mines have been productive for nearly 3000 years, and have yielded fabulous fortunes. The imports of tin in the first half of this year are of the declared value of 892,154*l.*, more than twice as high as during the first half of 1874, and 30 per cent. more than in that of 1873, showing that foreign producers are making their market here. Last month, deficient as trade was, there was more imported than in June, 1874. It is, however, a favourable indication that if our imports of foreign tin increase so do our exports of it. During the half-year the value was on the whole 172,270*l.*, about 70 per cent. of an increase over the first half of last year, and more than 100*l.* above the corresponding period of the year before. The imports have, as usual, been from the Malacca Straits, with increasing quantities from Queensland and Australia proper; the exports of this imported tin were mainly to France and Germany, but Germany and France, especially the former, derive a large portion of their tin supplies from Holland. The exports of British tin were unwrought, other portions being classed under hardware. The value of the unwrought tin was 261,787*l.*, only a little more than one-half what was exported in 1874, and 30 per cent. less than in the corresponding period of 1873. There was, however, an improvement in June as compared with the two preceding Junes, although it only kept up its proportion for the half-year.

The United States, although our best customer, fell off from the previous year 75 per cent. France, Germany, and Russia are our only other good customers. There is an excellent cross Channel trade, Ireland being a vast consumer of Cornish tin. Manufactures in tin cannot be exported to any large extent, it must be unwrought; as all nations of any civilisation know how to manufacture this metal into culinary and household vessels, tubing, and general purposes; it is so ductile, and the uses to which it is put are generally so simple. In Paris, however, it is being much used for fine art purposes. It is also being extensively employed by calico printers and others to make colours fast. The foreign tin imported is chiefly re-exported as it comes, or wrought into slabs and hardware, and exported or used in England. In the rest of the British Isles English tin is almost exclusively used. The half-year's import of lead was very valuable, having been 887,543*l.*, 120,000*l.* more than the corresponding period last year, and 100,000*l.* more than the half-year before. In the month of June it was 185,215*l.*, maintaining an ascendancy over previous months of June, such as the six months did over the previous half-years. The whole was in all the periods compared used for home consumption. The exports of British lead were not half so valuable as the imports of foreign lead; their worth was 332,324*l.*, 130,000*l.* less than in the first half of 1874, showing the comparative stagnation of trade during the present year. June showed an improvement; had the other five months shown as good a result the figures would have been 100,000*l.* more. Last month did not, however, quite come up to the corresponding period last year. China took nearly one-third of the whole during the half-year, chiefly in sheet. Australia was the next best customer, she imported pig, rolled sheet, piping, and tubing; Russia, the next customer, mainly wanted sheet lead, and British India took all sorts, her imports of sheet lead decreased, mainly from the defective tea crops of Assam; the Darjeeling and other teas falling far short of their usual product. The United States for the whole half-year only took the worth of 11*l.*, and last month did not take from us any. She took over 50,000*l.* in the half-year of 1873 corresponding with last, so that, as we expressed in a former article our apprehension would be the case, our trade with America has receded with wonderful rapidity. Such are the facts of the first half of 1875, many of them subjects of congratulation, and if all are not so happily has usually a sunny side in everything, and we will look forward with faith and hope to a report early in January next of the good fortune of the second half of the year.

#### MINING IN FLINTSHIRE—THE MOLD MINES.

In last week's Journal reference was made to the unfortunate position in which this company was placed by not obtaining the capital they required for the erection of another pumping plant at the eastern end of this important mining sett. There is no doubt the company were seeking for more capital than absolutely needed, wishing to leave a portion of the share capital uncalled, besides having the certain prospect of considerable returns immediately the mines were drained. The error committed was not obtaining the needful capital in the first instance, and erecting the two pumping plants required simultaneously, but the directors were differently advised, though Mr. John Darlington, of the Minera Mines, in his valuable report saw the necessity for advising this course, "Stating the importance of consolidating the different sets (Cathole and Gwern-y-Mynydd), and thus at one stroke avoid half the expense of draining the mines under the whole system, for it is certain that, as at Minera, the water pumped from the one mine found its way into the other, and had to be re-pumped."

This fact has been practically proved by the company during a succession of floods for nine months before the suspension of the mines; the great feature, therefore, in favour of this property is that for more than 2*1/2* years after the completion of the present plant the mines were kept well drained, or the new and important 100 fm. level could not have been effectively opened, nearly 90 fm. in all—over 50 fm. west and 30 fm. east on the lode. This is a most satisfactory proof of the draining power of the existing pumping plant.

Again, if a new pumping plant were erected on Gwern-y-mynydd or eastern end, as advised, it will not only assist and perfect the drainage, but will open one of the richest mines in the whole Principality of Wales. Such plant could be erected with comparative ease, as the chief and greater work has been successfully accomplished at Cathole, from which alone over 12,000*l.* worth of lead ore was raised in the short time, and at the time of the stoppage returns could have been made nearly sufficient to cover the monthly costs with every reasonable prospect, from the improving appearances of the lower levels, of their being speedily increased. The pumpwork was left with special care, in order that the works could be resumed without any difficulty; the advertisement gives the particulars of the buildings, plant, and machinery, which were completed in a most substantial manner. Lastly, the lords of Mold granted an important piece of land, called Deborah, to be added to the sett, in which a fine parallel lode is reported to exist north of the Cathole, and also agreed, in consideration of the erection of a pumping plant on Gwern-y-mynydd, to reduce the royalty to 1-20th for the whole term, which is one of the lowest in the Principality.

This is the position of the property, which will, doubtless, form a prize to any company under good management, and it ought not to be abandoned after an expenditure of 30,000*l.* in proving the value of these mines to a great extent, but especially when there are legitimate prospects of their being speedily developed into profits. Our reporters know the locality well, and the eastern portion of the take (which is 1*1/2* mile in length) bears special reputation, and it is to be hoped there will be sufficient enterprise excited to purchase it in its entirety, as there is no reason why it should not become one of the leading mining properties in the country; in fact, there is too much value discovered to break up; and as an analogy to these

opinions the successful Minera Mines may be justly quoted as an example, which were at one time in the same position, and were nearly abandoned.

#### GLAN CLWYDD (LEAD) MINING COMPANY.

The interesting ceremony of starting the new crushing and dressing machinery at this mine was preceded by a circular being sent to every shareholder inviting them to assist, thus offering to those who had never seen the property an opportunity of doing so under exceptionally auspicious circumstances. One of the most energetic of the directors, accompanied by two shareholders, gave an extra day to the thorough examination of all the underground workings, and his report to the board expresses his perfect satisfaction with everything he saw. His companions also bore strong testimony to the excellence of the arrangements on the surface, as well as underground. A much more important feature of the day's proceedings than the starting of the breaker, &c., was the finding of plenty of work for it to do. A splendid lode of steel ore (No. 1 east) was exhibited for the first time, and large specimens from the first shots were sent to the surface. This, with the other lodes being continually wrought, was a most gratifying proof to the assembled proprietors of the increasing value of the mine. The proceedings were wound up by the principal men being invited up to the agent's house to wet the new appliances. Due honour having been accorded to the "mountain dew," the Chairman addressed them in a brief, business-like, and energetic speech, thanking them very warmly for their untiring efforts, early and late, to complete the arrangements for the day's inspection, and reminding them that he and they were mutually dependent on each other; that their interests were identical; that the well-being of the mine would benefit both; and that claiming their zealous co-operation, he assured them that their interests and comfort would continue to be his study. He then made to them the evidently gratifying announcement that the captain had been instructed to order them a good dinner at the Bryn Hotel to commemorate the event. Hearty cheering hailed this evidence that their creature comfort had not escaped the attention of the board. The men having been thus pleasantly dismissed, the captain's health was most cordially drunk, when he in an excellent speech, and thoughtfully worded, left the impression on the minds of all assembled that they not only had a good mine to work, but an honest, energetic, and clever man to work it.

#### THE MINERAL RESOURCES OF THE SOUTH-WEST OF IRELAND—No. XIV.

[FROM OUR SPECIAL CORRESPONDENT.]

DREENALAMON BARYTES.—This mine, although the oldest barytes work in the south-west of Ireland, is, as far as extent of operations are concerned, completely in its infancy, and the great mass of barytes traversing virgin ground is, comparatively speaking, not only untouched, but appears to be inexhaustible. The water and stuff are discharged by a steam-engine, but other ways and means may be found for raising tens of thousands of tons without any steam-engines—that is, at certain levels. The engine on the mine is of sufficient power to command extensive operations in depth, and also for discharging the stuff. Water-power may also be applied during six months in the year for pumping, hauling, &c. This mine, as before remarked, is situated on the western slope of Mount Corin, which is 900 ft. high above the sea level. The market price hitherto for crude barytes appears to have ranged from 20*s.* to 35*s.* per ton, and some parties after incurring the expense of shipping cargoes have had them left on their hands, for it so happens that spar stones will not sell for barytes. Pure sulphate of baryta, however, will always command a ready sale, and when we consider that the hitherto highest price for best quality crude baryta is only 35*s.* per ton, and that the manufactured article of best quality is worth 5*l.* 10*s.* per ton, there is, after a liberal allowance for cost and expense of manufacturing, &c., a very wide margin for profit. There is no mystery in the manufacture of baryta, or other valuable products therefrom. Dreenalamon must, therefore, be considered a great and sound commercial undertaking, rather than simply as a mining speculation, and the exercise of common sense in the management would make it a grand success. On the south-west flank of Mount Corin two parallel copper lodes were discovered and partially opened many years ago. It is generally the case that at the points of intersection of east and west lodes by cross-courses or north and south lodes large deposits of mineral are found, and as the great barytes lode going south in virgin ground intersects these east and west copper lodes, there will, no doubt, be important discoveries made in this part of the property. There are good roads right through the works leading to Ballydehob, Schull, Dunbeacon, Durrus, Bantry, &c. Ballydehob is the shipping port, and the average freight to Liverpool is 5*s.* per ton. It is a well-known fact in mining or quarrying barytes that the pure article readily crumbles into small pieces; there is no fear that the so-called baryta, containing a large proportion of silica, will crumble, and although the small pieces are the purest parts of the baryta, yet the manufacturers tell you it is of no value. Now, when we know for a fact that all the large lumps must be reduced to small pieces before it is passed through machinery, and at a certain cost, surely the small pieces from natural causes must be the most valuable of the two. Here is another reason why the miner should become manufacturer.

NOVEL APPLICATION OF PEAT.—According to the invention of Mr. A. WILKINSON, of High-street, Marylebone, peat or turf is ground in a mill to a suitable powder. It is then amalgamated with pitch, tar, and bitumen, and after boiling, stirring, and cooling, it is pressed by means of hydraulic pressure into blocks of the required shape for road making and street paving in general. Or peat is ground fine and mixed with plaster, sand, lime, or with roman or other plastic body as a cement. For fuel the peat is mixed with coal dust, coke dust, or common ashes, and after immersion in a solution of pitch, tar, and bitumen is pressed into blocks, and will be found capable of giving a very great heat.

IMPROVED CALORIC ENGINE.—The invention of Mr. N. P. WATT-BOLTON, of Tew Park, Oxon, relates to engines worked by hot gases or by hot gases and steam, parts of the arrangements described being applicable for generating steam. A double acting cylinder is fitted with a hollow piston, having a tubular piston rod in which water is made to circulate. The piston has two packings, with a space between them open to the interior of the piston, so that as the latter moves in the cylinder the water contained in it comes in contact with the interior surface of the cylinder, keeping it cool. The cylinder may also be cooled by water in a jacket surrounding it. The steam generated in the jacket and piston is collected in a steam-chest, and employed to work in the same cylinder or in another cylinder. Fuel and air are pumped into the cylinder, and ignited therein performing work by driving the piston and generating steam, or for generating steam only, the fuel and air may be drawn into the cylinder, the piston being moved by the steam power, in which case several cylinders may be arranged in one line with their pistons one tubular rod. The products of combustion may be discharged from the cylinder through regenerators, through which, alternating therewith, the fuel and air may pass to the cylinder receiving heat.

WOODEN LININGS FOR FURNACES.—Mr. C. W. SIEMENS, of Westminster, proposes some improvements in the construction of working furnaces for the production of iron, steel, and ferro-manganese, and in processes connected therewith. His invention relates to lining rotary and other reducing furnaces with blocks of wood, rendered incombustible in some cases by impregnation with metallic salts, and set in refractory mortar; to constructing mid-feathers of furnaces with vertical air flues to keep them cool; to arranging regenerative gas furnaces with pockets between the regenerators for collecting dust carried over by the products of combustion; to mounting steel ingot moulds on a skeleton turn-table for facilitating the tapping of the metal; to producing ferro-manganese in a rotative wood-lined furnace; to reducing iron ore in the same; and to the preliminary calcining of phosphorus and sulphur.

DRYING AND TREATING PEAT.—According to the invention of Mr. R. G. PERRY, of Dublin, "in the kingdom of Ireland" the materials in cages running on a tramway enter a long tunnel through a door kept closed except when admitting said cages. Above this end is the chimney shaft. They traverse the tunnel to the other end where the furnace is placed and where abundance of air is admitted. From thence if necessary to an extra desiccating chamber. The details are varied to suit the substance to be treated.

HOLLOWAY'S PILLS AND OINTMENT.—Fever, ague, rheumatism, bilious remittents, asthma, and all other complaints which are the results of exposure or privation, or the effects of a vitiated atmosphere, are so readily and uniformly controlled by these pills and ointment that all classes in every country and climate accept and use them gratefully, and acknowledge them to be the one great world's remedy for disease. In towns and large cities, where luxurious living and indulgence lead to many disastrous complaints, the beneficial operation of these remedies is most marked and decided, and their popularity, founded as it is upon the daily experience of the sick, is on that account even on the increase, and will continue throughout all time.

JULY 24, 1875.

## Original Correspondence.

## WEST CHIVERTON MINE.

Sir.—If "An Old Miner" would be open enough to sign his name I should be in a position to find out whether he is a *bona fide* shareholder in this mine, or one of the clique of "bears" who are doing all they can to depreciate the market price of shares. He says:

"I hear that on Tuesday, the 6th, being inspection day, some few captains were sent down, and the results of their private reports show most conclusively the necessity there is for every shareholder being weekly acquainted with the condition of our property, be it good or bad." After these captains had inspected the mine, the shares, which had been quoted about 26/- per share, fell to below 13/-."

It would be very much better if "An Old Miner" would be honest in his remarks, and not mislead those in whose interest he professes to write. I find, on reference to the official lists of the Stock Exchange, that on June 15 shares were quoted 15 to 17, and they continued to be dealt in between those prices up to and including June 24. The lode was cut on Thursday, the 24th, and the agent's report of the same was received at the London office on the 25th. This report was forwarded to the *Mining Journal* on the same day for publication, and appeared in print on the following day (Saturday). On June 25 shares were quoted at 18 to 20, on the 26th business was done at 20½ and 20¾. On Monday, the 28th, business was done at 21 and 21½, and they continued to advance until the conclusion of the account. It was not until several days after the report of the lode being cut had been published that shares touched 26. On July 1, it would appear, the "bears" began selling for time on, for shares were quoted on that day at 17½ to 20, one transaction being marked at 21½; and on July 2 transactions were marked at 14, 16, 18½, 17, 18½, although, apparently, no alteration had taken place in the mine. On Monday, the 5th, and Tuesday, the 6th (inspecting-day), quotations were 14 to 16; on the day following business was marked at 13 and 14; and on the 10th the quotations were 16 to 18, actually showing an improvement of 3/- to 4/- per share the second day after inspection. So much for "An Old Miner's" insinuations that the fall from 26/- to 13/- was the result of the inspection of the mine by a few captains. Surely "An Old Miner" did not think, when he wrote his random letter, that anyone would take the trouble to find out the correctness of his assertions. What, I ask, can be his motive other than to depreciate the market, "not the intrinsic" value of the mine? A report from the agents showing there had been a falling off in one of these points from 35/- to 15/-, and not, as "An Old Miner" would wish shareholders to believe, from 60/- to 15/-, was published in the *Mining Journal* of the 10th inst. In conclusion, I would warn shareholders against putting faith in anonymous letters. They are generally written either from petty spite or to serve some selfish ends of the writer. If "An Old Miner" were honest, and his statement true, he would not be ashamed to sign his name. GRANVILLE SHARP, Secretary.

Gresham Buildings, July 23.

P.S.—It is a curious fact that the quotations for shares in this mine generally show firmness a day or two before the bi-monthly settling-days. To those unacquainted with the share markets this may seem strange, but to "market men" it is always considered a sign of shares being "beared." Several private purchasers of shares for the last settling (July 15) inform me that up to the present time they have been unable to obtain delivery of them, which may be taken as a guarantee that my remarks are well founded.—G. S.

## SIERRA BUTTES MINE.

SIR.—This company was formed about five years ago amidst a great flourish of trumpets, and the 2/- shares advanced to 5/- 10s. each; regular dividends of 2s. per share were paid quarterly, and the developments of the property were represented as being so extensive that there would be no difficulty in maintaining these dividends for many years to come—nay, there was greater probability of the dividends being largely increased—say doubled—rather than diminished, as they have since been by fully one-half—i.e., a dividend of 2s. per share is now only declared at intervals of six months, and as the profits have fallen from an average of 4500/- to only about 2000/- per month. I believe Mr. Janin, who was connected with the notorious Californian Diamond Company, was the principal "expert," on the faith of whose report the Sierra Buttes was purchased by the present company; he was also the consulting engineer to the company for some years after its formation, which appointment he resigned, alleging the developments of the mine were so extensive, its position so permanent and secure, the works were so perfect, and carried on with such systematic regularity, and the officers of the company were so thoroughly efficient, that there was really nothing for him to do, therefore he declined to receive a salary for an office which had become a sinecure.

Such an example of disinterestedness deserves to be recorded in letters of gold, did it not appear by the light of existing circumstances. I observe by the Journal of last week that Capt. Jenkins, who has been the principal underground agent at Sierra Buttes for 18 years, has also left the company's service, and become the superintendent of the Independence Mine, which adjoins the Sierra Buttes. What does this mean?—July 22.

ENQUIRER.

(For remainder of Original Correspondence see this day's Supplement.)

## ECHOES FROM THE MINING MARKET.

Dulness continues to characterise the market for tin shares. The value of the metal appears to be steadily receding, the decline on the week amounting to nearly 5/- per ton. This must cause further depreciation in the Cornish standards, and, therefore, further depression in the county. Supplies continue very heavy, the total available stock being now 13,408 tons, or about 4000 tons more than at the same period last year, and nearly 7000 tons above the preceding one. Deliveries also continue on a very large scale, and show a marked increase. In the face of these adverse circumstances it is not surprising that we have a languid and drooping market, and from what we can judge of the immediate prospects of the trade—heavy supplies in excess of demand, and consequent accumulating stocks—still lower prices must shortly be reached. The copper market is also in a dull condition, owing to news of heavy consignments, and the standard has declined. As set off, however, to this depressed state of affairs in tin and copper we are able to report good markets for lead, colliery, and foreign shares—indeed, the business now being transacted in these departments more than compensates for the restriction in the others. For the time of the year, too, the amount of business doing is very satisfactory, and there is no doubt that the public just now are largely investing in these three departments. In lead shares the principal attention is given to West Chiverton, Tankerville, Roman Gravels, Pateley Bridge, Pennerley, Plymlimon, Ladywell, and a few others; in collieries Chapel House and Thorp's Gauber Hall are attracting the chief business; and in foreign shares Eberhard, St. John de Rey, Sweetland Creek, Flagstaff, Richmond, and several others less known, but still steady dealt in.

Mining news from Cornwall naturally continues meagre. The following are the principal gleanings:—The heavy falls in tin have caused the Botallack executive to set their house in order. As many as 27 men have been discharged. The mine continues to look well, although that fact does not offer much consolation just now. There is no doubt that other mines will have to follow the example of Botallack, so there is likely to be a general deal of distress in the mining districts this winter. The shares of Carn Brea, Dolcoath, and Tincroft show reductions more or less heavy. In the first-named it is as much as 6/- per share. At Cremer and Wheal Abraham there is a fine course of copper in the 220, west of Richards's shaft. It is 6 ft. wide, and is yielding 5 tons of copper ore per fathom. At East Lovell the lode in the shaft (Watford), sinking below the 100, is looking excellent. It is worth nearly 4 tons per fathom. The shares, however, decline in sympathy with the market. We hear North Levant is about paying cost, and this, in the face of all things, is very encouraging. What the mine could do with a fair price for tin may be imagined. The last parcel of ore realised 48/- 7s. 6d. per ton. At Providence there are 51 men on tribute, at 15s. in the 1/2, with a standard of 40/- per ton for tin. The lode in the engine shaft, sinking below the 164, at South Carn Brea is looking well; the shares are in demand—rather a pleasant exception to the general rule. Wheal Owles has a good point in the new lode in the cliff part of the mine, worth about 50/- per fathom. Tin is still stocked here. Complaints are general throughout the St. Ives district, as the mines are doing very badly. West Seton has just started a new engine, and it has been christened "Rule's." This mine has paid upwards of 233,000/- in dividends, and distributes about 900/- each monthly pay.

We referred a short time since to the opening up of new fields of mining adventure in the West Yorkshire district—a district long famous for the richness of its lead mines. It may not be generally known to our readers that the greater part of the lead raised in England comes from the mines in Yorkshire and Durham, consequently the introduction of fresh capital into either of these districts must always be attended with the greatest interest. Latterly a mine in the first-named county (we refer to Pateley Bridge) has gained a good deal of attention amongst investors owing to its excellent prospects, and to the fact that, although now known for the first time amongst the public generally, it has for the space of many years (eighty, we believe) yielded good profit notwithstanding the limited, and we may say primitive, manner it has been worked. In order to give the mine the vigorous development it deserves, it was determined to extend the operations, and such was the character of the property that the capital required was very soon privately

subscribed. As, therefore, our readers may not be in possession of its salient features we append a few details which may prove interesting. The mines are situated 3 miles from Pateley Bridge Railway Station, and possess an area of 1000 acres. As we have stated they have been worked for many years, and always at a profit. The principal developments have been made by means of an adit at a depth of about 60 fms. from surface. Some years since another adit was commenced to drain the mine about 30 fms. deeper. This level was run for upwards of 200 fms., when it had to be suspended in consequence of the boundary being reached. The present proprietors have, however, obtained a lease of the adjoining portion, and the level will be continued without loss of time, and we are informed this will be of great value and importance in future working. There is sufficient plan on the mines to provide for a return of 120 tons of pig-lead per month, and the ore is found in such a solid and pure form that it requires but very little dressing, whilst the smelting works being on the property and owned by the company, the produce can be returned with the least possible expense. There are as many as 26 power-fail and well-defined ledges running through the property, but the principal operations have been on the Greenhowrake ledge, worth about 3 tons of lead per fathom. On Howe's ledge of equal value, and on the Blue Ridge and Craven Fault veins which yield lead in paying quantities. As the mines stand they can produce about 50 tons of lead monthly, but when 2000/- has been expended it is stated that the yield can be raised to 120 tons monthly (worth about 2800/-), one-half of which would be clear profit. It is not surprising, therefore, that with such a future before the mines the shares are in demand, and scarce. We believe that within the past few days some important improvements have taken place.

JAMES H. CROFTS.

## FLAGSTAFF SILVER MINING COMPANY OF UTAH.

In their report prepared for presentation at the general meeting to be held on Friday, the directors regret their inability to furnish weekly reports of receipts and consumption of ore, or of quantity and value of bullion obtained from time to time, having received no information thereon. During 1874 the ore extracted amounted to 14,767 tons, yielding 3520 tons of bullion, value 136,557/- 11s. 5d. The working expenses for the year were 122,984/- 16s. 2d., showing a profit of receipts over actual expenditure of 13,594/- 1s. 2d. For development, 1494 ft. has been driven, risen, and sunk in various directions. Messrs. Riddell and Stratton's election will have to be confirmed, Mr. Sergeant Sleigh, and Sir Leopold Heath have resigned, and the Chairman, Mr. J. T. Tweed, retires by rotation.

According to the report of Mr. Woodifield, who proceeded to Utah in April to inspect the mine and investigate the company's affairs, it appears that the vein following the course and the stratification of the country runs in the Flagstaff workings a few degrees west of true north, dipping to the eastward at an angle of about 45°, and proceeds in the direction of the Emma Mine, including in its course the South Star and Titus and the Valejo. Indeed, allowing for underlie, horizontal distance, and difference of level, he is not at all prepared to affirm that future developments may not tend to show that the Flagstaff and Emma Mines form part and portion of the same mineral deposit. The vein is intersected by a tunnel driven from the side of the mountain at a depth of from 300 to 400 feet from the mouth of Discovery shaft, and that above that level all the ore which Captain Goldsworthy, the mining agent in charge during the management of Mr. Maxwell and Captain Forbes, deemed worth removing was stopped and disposed of. Subsequently, during

Mr. Patrick's management, these works were again gone over, and some 4000 tons of ore which had been left extracted. The stopes, as far as he could examine them, were now bare.

From surface to within a few feet of the 180 ft. level the mineral contents of the vein appear to have consisted of a solid mass of ore, varying from a few inches to several feet in thickness; at this point, however, the ore pinched out, and was succeeded by vein matter apparently valueless. Cross-cuts driven at the 180 ft. east and west until they intersected what, in his opinion, are without doubt the hanging and foot walls of the deposit, revealed the fact that the lode, instead of being of the width bounding the mineral ledge above adverted to, consisted of a mass above 100 ft. in width, but not entirely barren, as pipes of ore of various dimensions and value were met with, proceeding generally from the one wall to the other, and making principally on the faces of either wall; these pipes of ore vary from a few pounds in weight to 200 or 300 tons. The vein matter consists of brecciated limestone, the fragments, especially in lower levels, being joined and held together by thin films of flockan, containing occasionally bosses of the hard country rock; the hanging wall is beautifully distinct, and follows generally the dip of the stratification of the surrounding limestone, whilst the footwall, which he had an opportunity of examining in the 180 ft. level, dips more quickly, and is not so clean or regular, as the hanging-wall.

The so-called walls of the mineral belt above the tunnel level were of veinstone, faced with flockan, and presenting such an appearance as to warrant the conclusion that they were true walls had not further experience established the contrary. North of the 105 ft. level the mineral vein apparently turned from its course, which, however, it resumed again, after having run a few feet. This is what has been represented as a slide, but it appears to him but a distortion of the mineral ledge within the vein matter, and he has no doubt that the walls laid bare at this point they would show no break, but prove continuous. A body of ore was here met with and removed, the end now being barren. Above and below the 105 ft. level Capt. Collins estimates there to be some 8000 tons of low-class ore standing, which may contain here and there small bunches of richer ore. Two thousand tons of this mineral were sold during last year at 86/- net per ton, purchasers mining and removing at their cost, bunches of higher-class ore thus developed being reserved for the company.

The developments, of which so much has been heard, consists in the sinking of the main shaft. The mine has been thoroughly denuded of ore, its eyes picked out, and were the mine agent required to-morrow to raise 100 tons of marketable ore, neither he nor any-one else could tell him where to look for it. Lying between the Flagstaff and the Emma are the South Star and Titus, and Valejo, these latter unmistakeably on the Flagstaff lode. To the former of these two he was not able to gain admittance, but he had the advantage of making an examination of the Valejo, which presented all the characteristic features of the Flagstaff. It is significant that as depth is reached in the Flagstaff the produce of the pipes of ore encountered improves. Capt. Collins informs him that the average assay of all the ore raised under the 180-ft. level amounted to 40 ozs. silver and 35 per cent. lead per ton, whilst the produce of mineral from the bottom of the winzes averaged still higher. The tunnel level of the Valejo is about 200 ft. below the Flagstaff tunnel—some few feet above this the continuous ledge of ore, similar to that remarked in the upper levels of the Flagstaff, changes to vein matter, carrying pipes of ore; and he was informed by the superintendent that the produce of these pipes likewise improves in depth, and that a parcel of 120 tons of solid ore raised from a level some 124 ft. deep, now under water, averaged 136 ozs. per ton.

The conclusions which Mr. Woodifield draws from his examination are that in depth the deposits of ore will be found to increase in bulk, and augment in richness. Reasoning on this inference he predicts a brilliant future for the mine, if it be only fairly handled and economically administered. Returns for the next six months, which period must elapse before the developments projected on his sketch can be completed, cannot reasonably be expected. Assuming the hoisting machinery which has arrived to be at once fixed and made use of in connection with the works, these developments may be executed for \$45,000. Allowing the deposit to average 100 ft. in width down to the 360 ft. level, the projected works will lay open 40,000 fms. of ground, much of which we may reasonably assume will prove rich in mineral. And this be it remembered on less than a quarter of the entire length of lode, which was transferred to the company by the Salt Lake Mining Company. Contemporaneously with these works, levels should be pushed northward in order to test the ground in that direction. On his last visit to the mine (June 24) the main shaft was some feet below the 270 ft., and the driving of the level was proceeding from both faces.

COAL IN BRAZIL.—The Inspector of Coal Mines for the Brazilian Government has recently made a report on the property of the Imperial Brazilian Collieries Company (Limited), which must be highly gratifying to the shareholders, after the numerous financial and other difficulties through which they have been called to pass. He states that the condition of the property under the management of Mr. William Tweedie has assumed a phase totally different to that which obtained when under the direction of the late Mr. William Johnson. From an extensive acquaintance with many of

the Durham pits, Mr. Tweedie was able to bring to bear an amount of practical knowledge which his predecessor did not possess. "By unabating perseverance," says the Government Inspector in this report, "Mr. Tweedie has been able to place the colliery in the most satisfactory state." The new shaft sunk by this gentleman has been excellently planned and most substantially constructed, and the coal that it has struck, though inferior to that produced from the Newcastle pits, may fairly be compared to that of Cardiff. The Inspector goes on to say that should the Government be so well advised as to order the use of this coal on board their vessels they will effect a saving of at least 50 per cent. upon the cost of English coal.

TECHNICAL EDUCATION—HOLIDAY LECTURES ON ROCKS AND METALLIC MINERALS.—The very interesting series of lectures, adapted to a juvenile audience, delivered during the Easter holidays by Prof. Tennant, and intended to facilitate the study of geology and of mineral substances, were noticed in the Journal at that time. The summer course, comprising six elementary lectures on Rocks and Metallic Minerals, will commence on Aug. 2, and be followed by six on Geology and Palaeontology. The lectures on the subject of geology are intended to have especial reference to the important practical applications of that science to engineering, architecture, and agriculture. The granites, syenites, porphyries, greenstones, clays, &c., will be described, and the minerals peculiar to each named. The application of geology to pursuits connected with mining operations for coal, iron, copper, tin, silver, gold, mercury, antimony, zinc, cobalt, &c., will be specially considered. The student is directed how to proceed in examining a new country, to collect and record his observations, and mark his specimens, in order to render them useful to more experienced geologists at home.

UNSEAWORTHY SHIPS.—Lord Gifford in giving his decision in the Court of Sessions, Edinburgh, in the case of the alleged unseaworthiness of the Bard of Avon, remarked, among other things, that it was much to be regretted that the wholesome and salutary rule of law relating to the survey of vessels had not very often been carried into effect in the case of unseaworthy ships which were lost. The unfortunate and melancholy result was that many ships were annually sent to sea lost property were yearly lost, but large numbers of lives were sacrificed by the culpable and wrongful conduct of the owners in sending to sea unseaworthy ships. The real risk was run by the uninsured seamen, including the officers, who were too often pressed by necessity to accept employment in vessels in which the owners had no interest further than that the assurance should be paid if the vessel was lost. It was lamentable, and even frightful, how many ships were lost at sea long after they should have been broken up; but they were far better paid for as lost ships than by being broken up as old material. The present case must be judged of on its own merits. The ship was built in 1839, so that when she was abandoned in Feb. 1873 she was 34 years old. Her original classes had long since run out, and she lay useless in the Clyde till 1870, when she was sold by the Clyde trustees to pay her dock dues. She was bought for 780/-, being about 11/- per ton according to her tonnage; whereas a new vessel would cost 20/- or 30/- a ton, and an old vessel even 12/- a ton. She must have been very bad when she realised so little. The dealers say they spent 800/- in repairs; but even admitting that, the price was still more than 2/- per ton—a miserably small price for a ship. In fact, the whole circumstances point in one direction—namely that this old and worn-out vessel was not fit for the known dangers of the voyage which she undertook, and to which, without loss of life she was obliged to succumb. The owners, in his opinion, had not complied with the terms of the contract, and they were answerable for the consequences.

The following report was received too late for insertion in its proper place:—

WILLOUGHBY.—H. Nottingham, July 20: Goddard's Lode: In the stop below the 13, north of No. 4 shaft, we have been stripping down the rhubarb ground, which makes on the hanging-wall side of the lode, north of No. 1 shaft, and we find it mixed through with lead and blende, worth 1 ton per fathom. This, with the first part of the lode taken away, will make the total from 2 to 2½ tons per fathom for the whole width of the lode (8 ft.). I have four men cross-cutting east from the 13, on the cross-course seen in the level. My object in this is to prove whether this rhubarb ground is productive going up behind the level or not. From indications, I hope to report an improvement here soon. The winze sinking below the 13, under No. 3 shaft, is yielding from 1 to 1½ ton of lead, and the same of blende, to a fathom. The 13 end, driving south of No. 3, is looking better, worth 15 cwt. of lead and 1 ton of blende per fathom, and ground better for progress. This is the No. 4 run of ore. If this goes down below the 13, in addition to the No. 3, the prospect is good for the 23, which has yet to be driven under this ground. We had to stop working at the No. 4 shaft for want of better ventilation. I put the men to sink another small shaft through into the middle of the stop, which has remedied this, and also given us a nearer way to get out the stuff. We are making fair progress at surface. Our supply of water is keeping about the same. I have sent out samples of 22 tons of lead, and we shall have 30 or 35 tons of blende against our sampling time.

## TO ENGINEERING IMPROVERS.

WANTED, by an old firm, a Young Gentleman in the DRAWING DEPARTMENT. Articles, premium, and future employment. Address, "Engineers," care of Messrs. Norie and Wilson, 157, Leadenhall-street.

WANTED, an EXPERIENCED COLLIER ENGINEER, thoroughly acquainted with underground work, to TAKE CHARGE of COLLIERIES in the SWANSEA DISTRICT. Applications, accompanied by testimonials and statement of services, to be sent to "X. Y. Z." MINING JOURNAL Office, 26, Fleet-street, London.

MINE CLERK.

WANTED, a SITUATION as ABOVE (South America preferred) by a Young Man, aged 20. Good correspondent, and quick at figures. Address, "X. Y. Z." Tachbrook-street, Pimlico, S.W.

WANTED, in the Office of a Colliery Manager, a THOROUGHLY COMPETENT and ACTIVE ASSISTANT, to TAKE CHARGE of the COALS SALES DEPARTMENT. Must have a good address, and have a practical experience in the fitting or coal sales office. Must have good references. Communications confidential. Address, "Box," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WANTED, an ASSISTANT in a MINING ENGINEER'S OFFICE. Short-hand writer preferred. Apply, "Box 15," Post Office, Sunderland.

WANTED, EMPLOYMENT as ASSAYER, or OTHERWISE, by a former Student of the Royal Schools of Mines of London, Berlin, and Freiberg, who has had practical experience in this country and Australia. References given. Address, "O. S.," care of FRED DUTTON, 9, Angel-court, Throgmorton-street, London, E.C.

THE ADVERTISER (aged 22), who has just finished a three years' College Course on Mining

## THE MINING JOURNAL.

## FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received July 1, 1875, ex Mondego (s.), dated Morro Velho, May 29.—  
GOLD EXTRACTED TO DATE.—The gold extracted during the second division of May, a period of 10 days, is as follows :—

	Ozts.	Tons.	Ozs. per ton.
General mineral	15,637.3	from 1463 =	10722
Re-treatment	1,550.8	"	1060
Total	17,238.1	"	11783
Ozs. troy.	Tons.	Ozs. troy per ton.	
1987.3414 from 1463 =	13584		

Equal to..... The above return is the largest daily duty and daily produce that has been realised for some time past, notwithstanding that the standard of the mineral has slightly receded.

GENERAL OPERATIONS.—These have continued with regularity, and without any noteworthy interruption or alteration.

Morro Velho, June 1.—Measurements taken to-day, and giving the results of the sinking and driving in the mine during and up to the end of May :—

Fms. ft. in.  
The sump has been sunk vertically during May ..... 1 2 5  
The driving west has been extended horizontally ..... 2 2 9  
The present length of the excavation ..... 35 5 10  
There are now five stoves of various heights being quarried from east to west in the excavation.

The Lyon Tail race Tunnel has been driven 7 fms. 0 ft. 7 in., and the timberwork completed by May 20.

The above measurements show a very fair extension of the mine excavation during the month of May.

The stope is giving very fair duty, and furnishing a larger supply of mineral than our present stamping power requires.

Advices received July 17, par Neva, dated Morro Velho, June 17 :—

GENERAL OPERATIONS.—Since the 29th ult., the work generally has been carried on with regularity, and good duty has been done.

PRODUCE FOR MAY.—The gold extracted during the month of May has amounted to 49,474 ozs., or 5703 5819 ozs. troy. It has been derived as follows :—

	Ozts.	Tons.	Ozs. per ton.
Mineral stamped	45,504.1	from 4257 =	10659
Re-treatment	3,970.2	"	932
Total	49,474.3	"	11621

Or 49,474 ozs. = 5703 5819 ozs. troy = 11621 ozs., or 1339 ozs. troy per ton.

COST AND PROFIT FOR MAY.

The produce being ..... 49,474.3 ozs.

Reduced loss melting into bars ..... 388.5 "

Cost, less sums receivable in reduction of same ..... 6,610 14 5

Profit ..... 12,417 15 7

GOLD EXTRACTED TO DATE.—The gold extracted during the first division of June, a period of eight days, amounts to 13,350 ozs., and has been derived as follows :—

	Ozts.	Tons.	Ozs. per ton.
Mineral stamped	12,139.8	from 1256 =	9665
Re-treatment	1211.0	"	964
Total	13,350.8	"	10629

Ozs. troy. Ozs. troy. Ozs. troy per ton.

13,350.8 = 1539 1299 = 10629 = 12354

The general health of the establishment is very unsatisfactory, the doctor does not remember when there has been so much sickness at this season of the year.

Measles is very prevalent.

The gold trove was dispatched on June 14 for Juiz de Fora, taking 20 boxes of gold, containing 61 bars, weighing in all 95,818.7 ozs. = 11,181 6189 ozs. troy, for shipment par Neva (s.), for delivery in London. The gold has duly arrived.

The following telegram had been received :—

June 19.—Produce eight days (first division of June), 13,250 oitavas. General work in the mine and on surface going on well and satisfactory, duty being accomplished.

June 23.—Produce for the month (May), 12,000/. All going on well.

July 5.—Produce eleven days (second division of June), 16,250 oitavas, yield 17 oitavas per ton. All going on well.

July 12.—Produce eleven days (third division of June), 17,500 oitavas, yield 12 oitavas per ton. All going on well.

DON PEDRO NORTH DEL REY.—Report for May—Produce and Cost: Produce, 8464 ozs., at 8s. 6d. per ozt. 3597.4s.; cost, 3164. 15s. 1d.; profit, 432. 8s. 1d.—First Division of June: Produce weighed 2580 ozs. Remittance (one month) 8048 ozs. bar gold.—Telegram: The following telegram from Rio, July 8, referring to a later date than the above advices, was received on the 7th inst., and sent to the newspapers :—Produce cleaned up (on account of June), 4700 ozs.; estimated total for the month (June), 6300 ozs.

PORT PHILIP AND COLONIAL (Gold).—July 21: Telegram: Month ending July 14: Yield per ton, 5 dwts. 10 grs.; western reef, 5 dwts. 7 grs. per ton; eastern reef, 10 dwts. 19 grs. per ton.

ALMADA AND TIRITO.—June profit, \$1621. Profits for six months, ending June 30 last, \$59,523.

RICHMOND.—Cablegram from the mine at Eureka, Nevada: Hall, London: Week's run, \$45,000.

SWEETWATER CREEK.—Telegram from the superintendent, Mr. G. D. McLean: We have cleaned up after a run of 59 days. The gross returns are \$31,000; the expenses are \$24,000; the profit is \$7000. I send you a remittance of \$7000; this run has been entirely on side dirt, and in the cost is included all the expense of the new pipe and the charges connected therewith.

RIO TINTO.—The general manager telegraphs from Huelva, under date July 20. Government inspection of line passed off satisfactorily. Rail communication between the mines and the sea now complete. Shipment of mineral on a large scale could commence to-morrow if necessary.

COLORADO TERRIBLE LODE.—The agent reports that the district judge has given permission to the company to remove the ore broken down in the workings, included in the injunction prior to its being served upon the agent. The judge has also ordered an increase in the amount of Hamill's bond from \$20,000 to \$30,000.

NEW PACIFIC.—C. O. Heanan, June 28: There have been no developments of special interest made in the mine since my last. I have made two small shipments of ore to the mill, our portion of the proceeds amounting to \$13.71 and \$72.45 respectively.

TECOMA.—July 23: The directors have received a telegram from the superintendent to the effect that he has sent a full report on the property by mail, and they expect to receive it on Monday. As soon as it comes to hand it will be circulated amongst the shareholders.

BLUFF TENT.—E. B. Eddy, June 27: I did not write to you as usual about the middle of the month, not having anything of special interest to communicate. We are getting on about the same as usual both in Enterprise and South Yuba. We have in 188 hours run at South Yuba, up to the present time, 100 hours of this we have put in this month, so you see we are improving on running time a little; in May we only got in 63 hours. The difference in time is owing in part to the good results of our last blast, and the cement is undoubtedly getting softer as we work back into the hill near the channel. We are washing quite consistently by day with the two pipes in the Enterprise, using all the water we have. We are now using a third pipe, as circumstances will permit, in piping off a point, and making an incline for a new route for pipe into the west pit of the Enterprise for next winter's use; it will shorten our string of pipe about 500 ft. or 400 ft. We now expect to have water until about August 1, so that we shall get the last blast in South Yuba well washed out. We may be obliged to quit washing in Enterprise before that time in order to clean up our bog flumes, and some of Enterprise canyon before the water falls. It will be necessary to make some considerable improvements on the mine in order to use the large amount of water our ditch will supply this coming season. I have laid this matter before Professor Pries, and he has, or undoubtedly will at an early day, lay the matter fully before you, as it is of great importance, and an imperative necessity, for without the facility to use the water it will be of little use to us. Work on the ditch is progressing rapidly, and I believe satisfactorily to all concerned.

CEDAR CREEK (Gold).—T. B. Ludlum, June 28: I last had this pleasure on the 21st inst., since then I have been enabled to keep the Yankee claim washing most of the time. We are still annoyed with those large rocks and boulders which come down from the top clay in such great numbers that the claim presents the appearance of a rock quarry rather than a mining claim. On the 24th inst. the spindle in the top of our derrick mast drew out, permitting the mast to fall and break. I have men out in the timber preparing another. In the mean time I am forced to use dynamite in large quantities with which to reduce the boulders, so that they will wash off. The Pacific claims we cleaned up on the 23rd inst., realising about \$2000, the expenses will amount to about \$1200. I have concluded to close this claim down for the season, which leaves only the Yankee at work.—The Yankee Tunnel: This all-important piece of work was driven last week as usual by one shift of men, who worked five days, and advanced 21 ft. Water Supply: I have received notice that the South Yuba Canal Company will not run water to this district later than June 30, consequently after that time we must depend entirely on our own storage reservoirs. It is to be regretted that we have not greater storage capacity. The ditches of the South Yuba Canal Company would now be nearly dry but for their lakes and reservoirs, whereas they will probably have plenty of water to run down the other divide until October.—Dead Work: I am doing no dead work, except on the Yankee tunnel. I am resorting to every means possible to keep our expenses down.

SANTA BARBARA (Gold).—The directors have received advices dated June 14, giving the results of the working at the mine for the month of May :—During the month ending May 31, 757 tons of mineral were stamped, yielding 817.03 ozs. per ton, or a total of 2403 ozs. of gold, which, valued at 8s. 6d. per ozt., amounts to 1021.5s. 8d. as the estimated value of the produce for the month. The mine working cost for same period was, at exchange 263d., 323. 17s. 9d., thus showing an estimated profit of 197. 7s. 9d. for May. The capital expenditure on the new No. 4 stamp and addition to watercourse amounted in May to 224. 3s. 4d. In the mine the lode had much the same appearance as when last advised, except that its size in the slopes between Nos. 1 and 2 levels had increased to 10 ft. wide, and was producing fair quality stone. With regard to the new stamps, the manager states that, although every effort was being made, he feared the same would not be ready to go to work before July, and that then, at first, inferior stone would be stamped by them in order to form a good foundation, &c., therefore for July a much greater increase in the produce over May or June must not be expected, but in August these stamps will fairly commence work, and from that time the average quantity of stone stamped monthly may be calculated at from 1000 to 1100 tons, at a cost of (say) about 1000/-, which the mine will be able to fully supply, and Mr. Hickey further states that, taking a safe estimate, reckoning 1000 tons mineral as treated each month, yielding (say) at least 3 ozs. per ton, which would equal 3000 ozs. at 8s. 6d., 1278/-, and deducting 1000/- for working cost, a monthly profit of 278/- will be made, or at the rate of 3500/- per annum. He has hopes, however, of considerably better results than this. The operations during May had

been somewhat interfered with by deficiency in force, owing to labourers having left to get in the harvest, but in the current month they were coming in again. The water supply had been equal to the requirements.

INDEPENDENCE (Gold).—July 23: The first report of the new superintendent has been received, in which he expresses the opinion that when the new stamps are got to work the mine will be able to make satisfactory dividends. Captain Jenkins concludes thus: "I must ask you to be a little patient with me to begin, as we are opening a new mine as it were; but I believe within 12 months I shall make this a better mine than the one I have just left (Sierra Buttes). I am highly pleased with the mine." Writing on the 27th ult., Mr. Kitto reports further great discoveries of ore bodies in the mine, one of which will leave a profit of quite \$500,000, and another in all probability a still larger amount. Mr. Kitto may be expected in London in the course of next week.

CHONTALES.—W. Smeddle, June 5: Although we have had a few heavy showers during the latter part of last month, the water is but slightly increased, and we are still compelled to use steam-power. On account of several feast days and other drawbacks we have crushed only 1405 tons of ore, from which we have obtained 294 ozs. of gold, average over 4 dwt. per ton, value 812. ; cost per month, 808. For the costs the following charges are included:—Paid for firewood, 150/-; charcoal (winter stock), 4L.—San Benito: I am glad to inform you that the lode continues to improve; at present the end is somewhat poorer than it has been, but there is not the least doubt that it will improve as we advance eastward; we have had a temporary delay during the past month in the main level, on account of ventilation; this has now been remedied, and I anticipate no further trouble. The lode in the end is at present 9 ft. wide, and worth about 4 dwt. per ton; the quantity of quartz extracted has been 388 tons, and the value about 6 dwt. per ton. San Sebastian: I am sorry to say this mine, so far as the north lode is concerned, does not give much encouragement. In No. 2 level we have met with very payable stuff a few days ago, but it is again poor; these small pockets will not pay for the large quantity of poor ore obtained by working the mine straightforward; during the past month we have taken a few tons from No. 1, rise, where we first met the rich shoot, about 18 months ago, which has increased the average yield per ton, the quantity to be obtained from this part is, I am sorry to say, very small. Until the south lode is proved to the same extent as that on which we have been working I do not consider the mine will have had a fair trial; we are rising on this lode at present, and shall shortly open an upper level to the eastward. The quantity of ore extracted during the past month has been 425 tons, and the yield about 3/4 dwt. per ton. Estrella: The lode over No. 1 level, or slide, is now exhausted. I am glad to inform you that we have found the lode near the surface, and west of slide; it is about 20 ft. south of where we lost it; we are now putting on a short cross-cut from the rise over No. 1 level, which will intersect the lode in a few days. The quantity of ore extracted had been 121 tons, and the yield about 4 dwt. per ton. We are still engaged repairing the deep level.—Santo Domingo: The ground continues hard, and there is no change to report; the quantity of ore estimated has been 310 tons, and the yield about 3/4 dwt. per ton.—San Antonio: The deep level has now been repaired, and cleared east of the stopped ground. I did not expect to have reached this point so soon; from the section the lode is marked as stopped further eastward; we are now putting up a rise, and expect to get a large and better supply of ore shortly; the quantity extracted has been 61 tons, and the yield about 3/4 dwt. per ton. In addition to the ore brought from the mines we have also reduced 100 tons of hard ore, collected from different mines during the dry season; the average yield has been 3/4 dwt. per ton.—Machinery, &c.: The pneumatic stamps are completed, and will be housed as soon as the necessary sawn timber is delivered; the water race to supply the wheel, &c., is proceeding slowly, but I think will be completed by the time the wheel and pit are repaired. The foundation of the old battery is considerably improved by the additional pieces placed under the mortar boxes, and do not expect any further trouble with it. The only means of working Consuelo with success is by carrying on the deep level, our costs being so heavily laden for firewood, &c. I have not done anything towards it; this work could be done with equal facility during the rainy season. In conclusion, I am glad to inform you that our prospects for the present month are good, and should nothing unforeseen occur I have no doubt we shall make a fair profit.

BATTLE MOUNTAIN.—Capt. Richards, July 1: Good progress has been made in driving the 330 ft. level north of the new shaft, and it is on to, and communicated with, Smith's winze, having been holed to Tonkin's winze some time ago, and air now perfect. In the stopes in the back of the 330 ft. level, north of Smith's winze, some good ore is obtained, but this getting so close up now to the 260, will soon be exhausted, I expect. The stopes in the back of the 260, south of Cook's winze, have turned out fine quantities of ore. In the 260 ft. level, south of the new shaft, we have had some splendid stones of red oxide, &c., but it is again without ore. The ledge at all points is very large, and of exceeding promise, and without ore.

JUDD'S SHAFT.—July 14: The lode in the 100 fm. level, driving west of Warnie's engine-shaft has fallen off a little, and now yields 1/2 ton of ore per fm.

The 85, west of Crosby's, contains a little ore. The 75 and the 65, west of Peill's engine-shaft, are each worth 1/2 ton of ore per fathom. The lode in the 55, west of this shaft is small and poor.

In the 90 cross-cut, south of San Francisco shaft, contains spots of ore. The 65, east of same shaft, produces 1/2 ton of ore per fm.—Shafts and Winzes: The 65, east of same shaft, will be down to the 90 in a few days. No. 200 winze, below the 85, yields 1/2 ton of ore per fathom.—Quintilento Mine: The 80, west of Taylor's engine-shaft, is worth 1/2 ton per fathom. The lode in the 65, south of Cox's shaft, is small and unproductive.

The 75, west of San Carlos shaft, is improving, now worth 1 ton per fathom.

The 65, west of San Carlos shaft, the men are cross-cutting north towards Henry's shaft. The 65, west of this shaft, is unproductive. The 55, west of same shaft, is heaved north, and the men are driving in that direction to intersect it. Both the 70, west of Judd's, and the 35, west of Swaffield's, are without ore.—Shafts and Winzes: Taylor's engine-shaft is being sunk below the 85. San Victor shaft, below the 50, San Enrique, below the 65, and San Felipe, below the 40, are all being sunk with regularity. The lode in Moreno's winze, below the 35, is small, yielding 1/2 ton per fathom. Baquero's winze, below the 60, and Tomas's winze, below the 50, east of Judd's, are unproductive. The lode in the 50, east of Judd's, is heaved north, and the men are driving in that direction to intersect it. Both the 70, west of Judd's, and the 35, west of Swaffield's, are without ore.—Shafts and Winzes: Taylor's engine-shaft is being sunk below the 85. San Victor shaft, below the 50, San Enrique, below the 65, and San Felipe, below the 40, are all being sunk with regularity. The lode in Moreno's winze, below the 35, is small, yielding 1/2 ton per fathom. Baquero's winze, below the 60, and Tomas's winze, below the 50, east of Judd's, are unproductive. The lode in the 50, east of Judd's, is heaved north, and the men are driving in that direction to intersect it. Both the 70, west of Judd's, and the 35, west of Swaffield's, are without ore.—Shafts and Winzes: Taylor's engine-shaft is being sunk below the 85. San Victor shaft, below the 50, San Enrique, below the 65, and San Felipe, below the 40, are all being sunk with regularity. The lode in Moreno's winze, below the 35, is small, yielding 1/2 ton per fathom. Baquero's winze, below the 60, and Tomas's winze, below the 50, east of Judd's, are unproductive. The lode in the 50, east of Judd's, is heaved north, and the men are driving in that direction to intersect it. Both the 70, west of Judd's, and the 35, west of Swaffield's, are without ore.—Shafts and Winzes: Taylor's engine-shaft is being sunk below the 85. San Victor shaft, below the 50, San Enrique, below the 65, and San Felipe, below the 40, are all being sunk with regularity. The lode in Moreno's winze, below the 35, is small, yielding 1/2 ton per fathom. Baquero's winze, below the 60, and Tomas's winze, below the 50, east of Judd's, are unproductive. The lode in the 50, east of Judd's, is heaved north, and the men are driving in that direction to intersect it. Both the 70, west of Judd's

JULY 24, 1875

## Mining Correspondence.

## BRITISH MINES.

**ABERDAUNANT.**—S. Toy, July 21: We have finished timbering the No. 2 adit level and footway winze. On account of the recent heavy rains we have been obliged to put timber in the deep adit level to keep it secure, which is also finished, and the men have to day commenced to stop the bottom of No. 1 adit, and to put in air solars. The stope in the roof of No. 1 adit level still continues good, and is worth 20/- per cubic fathom for lead. We sold last Thursday 10 tons of lead. Dressing is being carried on with all possible dispatch, in order to get another parcel of lead for sale as soon as possible.

**AMBROSE LAKE.**—P. Temby, July 20: Since last report we have been pushing on the cross-cut north as fast as possible, and have driven in the last eight weeks 13 fms.; this drive is 3 fms. more than we expected to have had to reach the lode. This morning I had a long hole put in the end, and it struck the main part of the lode. It bored for some distance in copper and mundic, but I cannot give its value until it is laid open. I hope in a few days to strike a good bunch of ore. There is a very large stream of water coming from the lode, and we are obliged to drive our engine five strokes per minute to keep it under. The lode in the end driving west has again improved; it is to-day 15 in. wide, worth 2 tons of ore per fathom. The lode in the stopes is of much the same value. I have to-day set a new stope in the west end of the winze, where the lode is 15 in. wide, worth 2½ tons of ore per fathom. We have commenced to drive east at the 14. On July 12 we sampled from 20 to 30 tons of copper ore, which will be sold at the next ticketing. We are preparing another parcel for the next sampling. I hope it will come up with the last. We are also sampling the mundic, and clearing up a little tin. We have ready from 3 to 4 tons of good arsenic, which I intend to sell to-morrow. We are still burning, and hope to have a better parcel by the end of another month. Everything is in good working order, and, on the whole, we are opening up the mine well.

**BAMPFYLDE.**—James Juleff, W. T. Haley, July 21: The 112, west of No. 4 shaft, is worth 10/- per fathom. The stopes in back of this level are looking quite as well as reported last week. In the 102, west of No. 4, the lode at present is influenced by a splice or slide. The stopes in back of this level are producing the usual quantity of copper ore. In the 90 west the lode is improved, and produces good grey copper ore. The rise above the 90 is worth 8/- per fathom. The stope in bottom of the 70, east of No. 4, is worth 10/- per fathom. The machinery is all in good working order.

**BEDFORD CONSOLS.**—George Rowe, Joseph Mitchell, July 20: The 67, east of sump shaft, is suspended for the time being, and the men are put to sink a winze in the bottom of the 57 in order to open out and prove the ore ground already driven through, as well as for ventilating the bottom of the mine. The lode in the winze is at present worth 5/- per fathom. We shall commence taking down the lode in the stopes in the back of the shallow adit level in a day or two, and judging from outside appearance, we expect to find a good lode. The lode in the stopes at the 15, east of air shaft, is worth 5/- per fathom.

**BLUE HILLS.**—S. Bennetts, A. Gripe, July 17: In the 50 east, on the main part of the Pink lode, there is not much change to report. The lode is large, well defined, and containing throughout of low quality, and at present a sort of leader of a better quality stuff is forming on the south wall; we are hoping this may lead to something better. There is no alteration to notice in any other part of the mine.

**BOG.**—W. T. Harris, J. Barkell, July 21: The lode in the 175 east is 1½ ft. wide, worth 1½ ton lead per fathom. The main lode west yields good saving work, and is very promising for an improvement. The lode in the 163 driving west is not quite so good for lead, but, judging from appearance, we shall now be in good lead-bearing ground; at present it is worth 15 cwt. lead per fathom. The lode east, on north lode, yields stones of lead, and the ground is improving for progress. The lode in the 60 west, and east of cross-cut, continues to open out blonde ground, and is worth 3 tons per fathom. There is no change in the 50 east, and the same may be applied to the cross-cut driving north at this level.—Tribute Department: The pitches throughout the mine are yielding fair quantities of lead and blonde. Friday next being our monthly setting, a full report shall be next week. To-day we have sampled 45 tons lead and 55 tons blonde for sale on the 25th inst.

**CRENVER AND WHEAL ABRAHAM UNITED.**—Wm. Thomas, July 18: The 228, west or Sturt's, will yield 1 ton of copper ore per fathom, value 5/-; the 215, west of St. George's shaft, will yield 3 tons, worth 6/- per ton, 12/- per fathom. The 203 in the south lode, 1 ton at 5/-; the winze in the bottom yielding 1½ ton at 6/- per ton, 9/- per fathom. The 220, east of Woolf's shaft, will yield 2 tons, worth 8/- per ton, 16/- per fathom. The 220, west of Richard's, will yield 5 tons, worth about 3/- per ton, 15/- per fathom: this end has fallen off the last 2 fm. driving, but I hope it is only temporary. It is very probable that the lode is split at this point, and that there is still a part standing on the north side, which, of course, we shall prove in due time. The 234 west of Blewitt's shaft, has a much better appearance, now yielding good stones of copper ore. I think this end will shortly improve. We sold on Thursday last 7 tons 2 cwt. of black tin, realising about 32/-; we cannot maintain our sales of tin, as our stock of tin stone at surface is nearly exhausted, and very many of the tin tributaries are working in copper, which I think is more remunerative, tin being at this time in a very depressed state. Our copper sampling is on Tuesday next, when we hope to sample close to 500 tons, which will be 730 tons for the two months, the greatest quantity sampled in the time since the mine has been working. I think these two months we shall very nearly meet expenses and I hope to go on increasing and make the mine pay. We have been discovering a great deal of copper, and you see we have been taking it away, but in no way unfair. Our reserve, I should say, is much the same.

William Thomas, James Hammill, July 21: Setting Report: Sturt's Engine-Shaft: To drive the 228 west by eight men, 1 fm., or the month, at 12/-; the lode is 3 ft. wide, yielding 1 ton of copper ore per fathom.—St. George's Shaft: To drive the 215 west, by four men, 1 fm., or the month, at 12/-; the lode is 3½ ft. wide, and will produce 2 tons of copper ore per fathom. To drive the 215 east, on the south lode and west of shaft, by four men, 1 fm., or the month, at 13, 10s.; the lode being 1½ ft. wide, yielding a little copper ore. To drive the 200 east, on the south lode, by six men, 1 fm., or the month, at 9/-; the lode is 1½ ft. wide, producing 1 ton of copper ore per fathom. To sink the winze below the 203, on the south lode, by six men, 1 fm., or the month, at 10/-; the lode is 2 ft. wide, yielding 1½ ton of copper ore per fathom.—Woolf's Shaft: To drive the 220 east, by six men, 1 fm., or the month, at 10/-; the lode is 4½ ft. wide, and will produce 2 tons of copper ore per fathom. To drive the 220 west, by two men, at 9/-; the lode is 2 ft. wide, yielding stones of copper ore.—Blewitt's Shaft: To drive the 234 west, by eight men, 1 fm., or the month, at 9/-; the lode is 4½ ft. wide, yielding a little copper ore. The lode in this end has a much better appearance.—Richard's Shaft: In the 220 west the lode is 6 ft. wide, yielding 5 tons of copper ore per fathom. To drive the 210 west, by two men and two boys, 1 fm., or the month; the lode is 4 ft. wide, yielding a little copper ore. To rise in the back of the 200 west, by six men, 1 fm., or the month, at 10/-; the lode is 1½ ft. wide, composed of spar and mundic. We expect to communicate to the 130 this month, when we shall be able to resume the driving of the 200, where the lode is of great promise. We sampled yesterday 5½ tons of copper ore, which, with the 210 tons sampled last time, makes a total of 740 tons of copper ore for the two months. There are employed on the mine on tuck-work 58 men and boys; on tribute, 130; on surface, 38; total, 298.

**CWM DWYFOR.**—J. Jewell, July 22: South Cross Cut: The No. 4 lode is 2½ ft. wide, yielding fully 1 ton of silver-lead ore per fathom. The No. 3 lode is 20 in. wide, composed of quartz, sulphur, &c., and yielding good stones of lead and copper ore. The level on this lode is parallel with the No. 4 lode, and they are only 40 ft. apart from each other; as soon as we reach the slide, about 4½ fms. further east, we hope to cut into a similarly productive lode to the No. 4 lode.—North-Cross-Cut: In driving the level on the No. 4 lode, we are carrying about 3 ft. of the lode; it is composed of quartz, iron pyrites, lead, and copper ores. We are sinking in the old men's shaft on this lode, and it is producing good work for lead and copper ore, and is promising for speedy improvement.—Incline and Tramway: We have completed about 290 yards from the terminus of the Gorseddau Junction and Portmadoc Railways up to the ore floors.—Machinery: The machinery works well, and operations are being pushed on with vigour.

**CWM ELAN.**—W. Goldsworthy, July 17: The engine-shaft is down 9 fms. 4 ft. below the 20; the lode is 12 in. wide, worth 10 cwt. per fathom for lead and blonde ores. The sinking stent is not yet completed. The 20, east of shaft and west of cross-course, will produce about 7 cwt. of lead ore per fathom; bargain refused at old price—6/- per fathom. The stope in the back of this level is worth at present 10 cwt. of lead ore per fathom—bargain refused. The stope east of cross-course, back of the same level, will produce 18 cwt. of lead ore per fathom—not taken. The stope at the back of the 20, west of shaft, will produce 25 cwt. of lead ore per fathom; set to two men, at 3/- 15s. per fathom. I am glad to say that we have a good supply of water at present, and we may expect regular working of our machinery for some time. I intend putting on four men as soon as I can get them to sink the winze from the 10 to the 20, west of shaft; this should be done, as this part of the mine requires ventilation. In conclusion, I beg to add that the machinery is working well, and the mine in general has a very promising appearance.

**DE BROKE.**—T. Hodge and Son, July 20: During the past week Wilson's shaftmen have been engaged cutting a gutter round the shaft in the 25 to take up the top water, &c.; this is completed, and sinking resumed to-day. The trial winze is not looking quite so well, in the bottom the ore appears to be dipping east. We value the lode to-day at 18/- per fathom. The stope in the back of the 25, west of the junction, is without change, worth 18/- per fathom. We are pushing on our surface work with all possible dispatch. The masons have commenced the wall for the washing strip, and the smith and carpenter are busy with the rods, balance-hobs, &c., for Wilson's. In the dressing department everything is going well. We sold to day 12 tons of lead ore to Panther Lead Company, at 13/- 10s. per ton.

**DEN BIGHSHIRE CONSOLIDATED.**—J. Pryor, July 22: In the 112 east we have cut into the hanging side of No. 2 lode, and the ground becomes more impregnated with ore every inch we go, but it is, however, hard, and progress necessarily slow. In the 112 west cross-cut to the lode I cannot report of any intersection so far, but after carefully examining the diallings and our plans I am convinced that a drive of less than 13 ft. must strike the vein. In the new lode, I am pleased to say, the expectation of its proving valuable as more ground is opened is being realised; there is now good lead ore in the forebreast, and as the ground is broken water is issuing, a certain indication that we are drawing near to an important change.

**DEVON GREAT CONSOLS.**—Jas. Richards, July 23: Wheal Maria: Gard's Engine Shaft: The lode in the 95 fm. level east and west is still 3 ft. wide, and contains a little ore.—New North Lode: In the 50 fm. level cross-cut south nothing has as yet been met with; the ground is rather hard for exploring. In the 54 fm. level cross-cut north the lode has been intersected and cut into 15 in. It is composed of capel, quartz, mundic, and a little of both tin and copper ores. In the 28 fm. level east the lode is 3½ ft. wide, consisting of mundic, blonde, capel, quartz, with a little tin and copper ore.—Wheal Josiah: Field Shaft: The sinking of Richards's engine shaft below the 280 fm. level progresses favourably; the lode is 3 ft. wide, composed of mundic, capel, quartz, and a little tin ore.—New South Lode: The various points of development on the new south lode at the railway and the new shaft are opening out favourably, and the value of the lode for the part carried amounts to 40 tons per fathom.

**DUBBY SYKE.**—Wm. Tallantire, July 18: We are driving the cross-cut north from Dubby Syke vein, and are 3 yards north from old shaft. In the shooting-box level we have cleared, and laid down iron tramway 35 fathoms. We have made good progress with the buildings lately, and have made some trial for a new vein where ore was seen in making the road. We have found nice samples of ore in the clay, but have not yet ascertained the bearing of the vein.

**DYLIFFE.**—Edward Rogers, July 21: Dyliffe Lode: The 120 is set to six men, to drive east of boundary-shaft, the month, at 8/- 10s. per fathom; the lode worth 20/- per fathom. In the bottom of the 50 we are sinking a winze, by six men, at 6/- per fathom; the lode is 1 ft. wide, and producing a little lead. The 25 is driving

east of old engine-shaft, by four men, at 6/- 5s. per fathom; the lode worth 8/- per fathom. The 15 is driving east of this shaft, by six men, at 6/- 10s. per fathom; the lode is 3 ft. wide, composed of spar and blonde, and a little lead ore. The winze in bottom of this level (contract not completed) is sinking by the side of the lode, at 7/- 15s. per fathom. I expect we shall hole to the level below in a few days.—Esgairgaled Lode: At the 45 we are cross-cutting, by six men, at 8/- 10s. per fathom; the lode, so far as seen, is producing some good stones of lead. In the 55 there are six men sinking a winze by the side of the lode, at 5/- per fathom; stoned to hole to the 45 below; the lode has been pricked into near the lode, at 7/- 15s. per fathom. I expect we shall hole to the level below in a few days.

**EAST CHIVERTON.**—R. Sonthey, July 22: Last Friday we set the following bargains:—The 64 fm. level cross-cut, to drive north, by six men, the month, at 5/- per fathom; the ground is a little harder than when last reported on, but very congenial for the production of lead ore. The 52, to drive east on the course of the lode, by four men, the month, at 3/- per fathom; lode 5 ft. wide, producing occasional stones of lead—a very promising-looking lode. The 52, to drive west, by four men, the month, at 3/- per fathom; lode 3 ft. wide, composed of fluor-spur, mundic, with occasional stones of lead, and looking very kindly to improve.

**EAST DARREN.**—July 19: Skinner's Shaft: In sinking below the 116 fathom level the ground is composed of a dark clay-slate and spar—a little easier for exploring. In the 118, driving east of cross-cut north, the lode is 3 ft. wide, yielding from 6 to 7 cwt. of lead ore per fathom. In the stope over the 104, 40 fms. west of Taylor's shaft, the lode is large, yielding from 5 to 6 cwt. of lead ore per fathom. A drift west of cross-cut, under the 80, is communicated to the rise or pitch over the 92. In the winze under the 80, 200 fms. east of Taylor's shaft, the lode is unproductive. We hope to communicate to the rise over the 80 in a fortnight. The pitches over the different levels are looking about the same as usual, yielding a fair quantity of ore. The machinery is in good working order. Drawing and dressing progressing regularly, and the reservoir has a good supply of water. On Tuesday, Aug. 3, we hope to sample 50 tons of lead ore.

**EAST WHEAL BASSET.**—Richard Pryor and Son, Edward Adams, July 21: On Friday last we set the back of the 50, west of flat-rod shaft, to stope by six men, at 3/- 10s. per fathom. The lode is 2 ft. wide, with a good appearance, and producing 20/- worth of copper ore per fathom. We are carrying this stope about 3 fms. in length, and there is a good lode of one in both ends of same as well as back. We have no further change to remark on since last report. We sampled to-day (continued) 25 tons of copper ore.

**EAST WHEAL GRENVILLE.**—E. Hosking, W. Bennetts, July 17: Setting Report: To stope below the 120, west of engine-shaft, by six men, at 1/- per fathom; the lode is 2 ft. wide, and worth 5/- per fathom. To drive the 120 cross-cut, north of engine lode, by two men and one boy, at 9/- per fathom. To stope above the 110, east of rise, by two men, at 2/- per fathom; the lode is 2 ft. wide, and worth 6/- per fathom. To drive the 25, west of cross-cut, on north lode, by six men, at 4/- per fathom; the lode is 2 ft. wide, composed of quartz, peat, mundic, copper, and yielding saving work for tin. We have also set 10 pitches to 19 men, at an average tribute of 12s. 6d. in 1/-, the tributaries to be paid at the rate of 45/- per ton for black tin.

**GAWTON COPPER.**—G. Rowe, G. Rowe, jun., July 17: The lode in the 117, east of King's engine-shaft, is carried 5 ft. wide, showing a very kindly appearance, with a leader of mundic and ore on the south part of the drivage 14 in. wide. The lode in the stopes in back of the 95 are worth 10/- per fathom. The lode in the winze sinking below the 105 is worth 12/- per fathom. The lode in the stopes in the bottom of the 95 is worth 10/- per fathom. The lodes in the back of the 95 are worth 10/- per fathom. The lode in the winze sinking below the 82 is improving in character, and worth 12/- per fathom. The south part of the lode in the 82 east is yielding very strong mundic and good stones of ore. The lode in the rise and stopes in the back of the 70 level east is worth 10/- per fathom. All other points without change.

**GLAN CLWYD.**—J. Kemp, July 17: With the completion of the new machinery everything here now is in full swing. The underground department is also very cheering. In spite of the stiffness of the ground, we are making fair progress with the deep adit towards No. 3 lode. No. 1 east is quite as good as when the directors and shareholders saw it this day week, and is daily producing fine lead. The width of the lode I have not been able to ascertain, in consequence of the levels being so full of metal, and as it is very expensive to wheel, I am laying down a turn-table so as to put the wagon up to the forebreast; this will enable me to attack the lode with greater vigour. The stope west of rise is a fine lode, yielding mundic and good stones of ore. The lode in the rise and stopes in the back of the 105 is worth 12/- per fathom. All the stopes in the back of the 95 are worth 10/- per fathom. The lode in the winze sinking below the 82 is improving in character, and worth 12/- per fathom. The south part of the lode in the 82 east is yielding very strong mundic and good stones of ore. The lode in the rise and stopes in the back of the 70 level east is worth 10/- per fathom. All other points without change.

**GLYN.**—J. Roach, July 22: We are getting on well with the work for engine, &c. The winze sinking under shallow adit level is exceedingly promising, and producing lead similar to the samples sent to the office—the lode is impregnated with ore throughout; this is yet very shallow, and on the south boundary wall the lode is 40 ft. wide and upwards, therefore I have great confidence in soon meeting with ore in large quantities.

**GOGINAN AND LEVEL NEWYDD.**—July 12: Bryn Pica shaft is now nearly squared down to the 100, and we shall proceed with putting in pent-house, &c., and commence sinking shaft below the 100 as early as possible. We have not yet got the water in fork at the 110, but hope to do in a few days, so as to commence sinking the western shaft below that level, and get down into the ore ground. The foundation, &c., for turbine and hauling gear at the 60 has been cut, block built, and place well secured. We shall now commence fixing same and proceed with the necessary work along the level and in the western shaft as fast as possible. The four tribute pitches in the old part of the mines are yielding on an average 13 cwt. of ore per fathom. All surface operations are being vigorously proceeded with, and we shall sample 23 tons of silver-lead on the 20th inst. There has been heavy rain lately, which has well supplied the reservoirs with water.

**GORSEDD AND MERLLYN CONSOLS.**—W. Edwards, July 22: In the driving east from Gorsedd shaft there is no change worthy of comment since my last report, but the appearances of open ground are still as favourable, and, as we are nearing the line of direction where the run of ore should dip down into the level that proved so rich above our heads, I am in great hopes of sending you good news of this soon.—Merllyn Shaft: In two or three days we expect to have finished clearing the bottom level, and thus able to get to the forebreast where the old men left off working. No other change to note. We shall sell a parcel of ore next week.

**GOWEN LAXEY.**—F. Reddoch, July 13: Deep Mine: The two ends at the 35 engine-shaft continue to be driven, and without any change. The Welsh shaft, sinking below the 220 west, is improved now, being worth 40/- per fathom for length, or 2 fms. The four stopes in roof of 220 north are worth 40/-, 25/-, 18/-, and 35/- respectively. We shall commence driving this level through the 210 end, north next month, as by that time we shall have completed the bottom of the level to that point. The 210 west is poor; the stope in roof of this level is worth 20/- per fathom. The 200 north produces a little ore, and the lode is of such a character as to induce us to think that we shall soon be into something valuable and lasting again at this point. The stope in the roof of this level is worth 15/- per fathom. The sink and stope in the sole of the 190 is worth 55/- per fathom. The 190 end is worth 15/- per fathom. The three stopes in the roof of the 185 north are worth 50/-, 25/-, and 40/- respectively. The 145 end north we find to be about up to the 140 level; the lode is 4 ft. wide, yielding saving work both for tin and copper, and looking promising for a speed improvement. In the 90 cross-cut, driving north, the ground is still favourable for progress. In the 75 cross-cut we have intersected a small branch, containing stones of rich copper ore, computed 137 tons.

**NEW PEMBROKE.**—F. Puckey, C. Merrett, July 20: In the 120, driving east of the engine-shaft, the lode is divided by a horse of killas, and not so good for tin as when last reported. The south part of the lode is now worth 7/- per fathom for tin,

JULY 24. 1875.]

## THE MINING JOURNAL.

803

a good deal of water to contend with here, which makes against its sinking as fast as we wish (hence the price). We have 22 men on tribute in different parts of the mine, at tributes varying from 12/- to 18/- per ton for No. 1 quality dressed ore. No. 2 tribute pitch, in the back of the 70 south, during the last take has very much improved; it is now set to four men, at 12/- per ton—last tribute, 17/- per ton. The trammimg, filling, and landing, and other contract work, much the same as to price and number of men as for the last two months. Our last two parcels of ore are sent to Wadebridge, and we are preparing for another sampling as usual.

—W. Hancock, July 22: Since our report, yesterday, we have communicated to the 80 south with the winze, which has been ventilated this level.

PARYS MOUNTAIN.—T. Mitchell, July 22: The ground in the 90 cross-cut is a pleasant stiff and jointy, and rather spar for driving. The 65, west of cross-cut, is looking very promising and hopeful. The 45, east of cross-course, is now through the vug, and showing a little copper ore. The lode at this point is rather hard; but we hope the ground will soon get easier, when we shall expect a more productive lode. The stopes and other points are yielding much the same as when last reported.

PATELEY BRIDGE.—J. Blenkiron, July 20: Last week I again visited and inspected the above mines, and beg to hand you my report on the same. There is not much alteration in the general appearance of the works since last month, but fair progress has been made in the different workings. First, we have now commenced sinking the engine-shaft in or for Rake vein; six men have been at work last week in the said shaft, and three more were placed there last Monday. I trust we shall make fair progress, having sunk about 3 ft. I have got a license for the use of dynamite, which will considerably facilitate sinking and working generally in wet and hard ground. We have six men driving a cross-cut west in the 20; this cross-cut is very hard, and letting out water freely. I think we have been costing from 12/- to 18/- per fathom, and driven 2 fms. 3 ft. last month. There are four men cross-cutting east from the 20, towards Howe's vein, in which is Fielding's sump, where there is good ore standing; we have about 15 fathoms of main level have been timbered and repaired last month, towards the eastern part of the ground or royalty, Sun vein, &c. I have not been able to get into Bentley sump or shaft, which is sunk 30 fathoms below adit, on account of bad ventilation. I am afraid we cannot work this part of the ground without a shaft from the end, which looks as if there is more lode ahead. The stope in the back 15 fathoms have been opened, raised, and repaired; this vein has been worked by the late company on tribute, and they have driven an incline 8 to 10 fathoms in advance of the main level; we are now stopping or taking up the level sole, and shall get to the forebay in about a month. We purpose continuing the level forward south-east, where there is a long length of virgin ground, and a fair prospect of getting ore. In the new discovery (north from the 10 fm. level), going east and west in the vein, there have been about 11 fathoms of ground driven and stopped; going west we have come into a gulf or strike, which has confused the vein. The eastward lode or ground is hard, and has not been yielding so good ore as last week, but opening out again. The stope above the level is worth 20 to 24 cwt. of ore to the fathom, and workable at 35s. per fathom. Two men have been cross-cutting north in Blue Riggs top level to prove the lode, where we have some nice ore standing, which we do not intend working until we get a better way gate into this part of the ground. The above are the principal working now being proceeded with, and we expect to make better progress when we get dynamite introduced into the works, especially in the engine-shaft and west cross-cut, from 20 fm. level, which are extremely wet and hard. We have got a quantity of peat fuel for dry working, which will be ready for housing in a few days should the weather be favourable.

—C. Williams, July 21: New Discovery: The vein in the cross-cut north in the engine-shaft, is 2 ft. wide, chiefly composed of gossan, lime-spar, quartz, and lead ore; from present appearance of the vein in the forebay I fully believe that we are approaching another run of ore-bearing ground, which can be traced in the upper section of the workings over the day level. The vein in the western end of the cross-cut is 4 ft. wide, yielding from 20 to 25 cwt. of ore per fathom; the ground in this bargain is very easy to work, and the men are making fair progress. We have driven 10 fms. and risen 1 fm. 4 ft. within a month's time by 10 men. The 20 cross-cut, south-west to cut Dickson vein, is being proceeded with as fast as the nature of the ground will admit of. The ground of the forebay is composed of strong limestone intermixed with spar, and letting out a great quantity of water; we have six men in this bargain, who have driven 2 fms. 3 ft. of ground during a month's time. The cross-cut north-east, also in the ground in the end is strong metalliferous limestone, very congenial for producing mineral. Ground broken during the month 2 fms. 1 ft. 6 in.—Engine-Sump: This sump is in regular course of sinking under the 20, and fair progress is being made. We have obtained a general license from the Secretary of State to use dynamite, which will enable us to carry on the sinking with facility.—Pringap: During the month we have cleared, secured, raised, and widened this level 18 fms. 2 ft. The former workers left the sole or bottom of their level to rise about 2 ft. in 6 ft.; we are compelled to take it up, but I am glad to say we find some very good metal in it; next week we shall enter this level into whole ground.—Blue Riggs: This level has been extended during the week 5 ft. 6 in.; the vein in the end is 4 ft. wide, consisting of limespar and quartz and cubes of lead ore; we have a short distance in Sir Thomas vein yields fair and good metal, and likely to improve. The pumping and drawing engine works satisfactorily.

PEN-DAN DREA UNITED.—William Tregay, William Frideaux, John Pope, July 17: Sump: The lode in the 160 west end (Martin's) is producing good stones of tin, and looking promising for improvement. In the 150 west winze the lode (Martin's) is looking well; we have not up to the present time got the south wall; the lode, but we have not up to the present time got the south wall; the lode, towards the 50, and at the 40, which we have now so nearly reached, the cross cut will be a little more than a third of the length of that which we are now working at. The 40 west end the lode (Martin's) is worth 10/- per fathom. In the 120 west end the lode (Martin's) is worth 9/- per fathom.—Cobblers': In the 100 west end the lode (north) is worth 10/- per fathom.—Cardoz's: In the 70 west end the lode (north) is worth 10/- per fathom. In the 50 west end the lode (north) is worth 10/- per fathom. In the 30 west end the lode (north) is worth 10/- per fathom. In the 20 west end the lode (north) is worth 10/- per fathom. In the 10 west end the lode (north) is worth 10/- per fathom. In the 5 west end the lode (north) is worth 10/- per fathom. In the 2 west end the lode (north) is worth 10/- per fathom. In the 1 west end the lode (north) is worth 10/- per fathom. In the 100 west end the lode (north) is worth 10/- per fathom. In the 80 west end the lode (north) is worth 10/- per fathom. In the 60 west end the lode (north) is worth 10/- per fathom. In the 40 west end the lode (north) is worth 10/- per fathom. In the 20 west end the lode (north) is worth 10/- per fathom. In the 10 west end the lode (north) is worth 10/- per fathom. In the 5 west end the lode (north) is worth 10/- per fathom. In the 2 west end the lode (north) is worth 10/- per fathom. In the 1 west end the lode (north) is worth 10/- per fathom. In the 100 west end the lode (north) is worth 10/- per fathom. In the 80 west end the lode (north) is worth 10/- per fathom. 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\* \*\*With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Iron Industries of South Staffordshire and Worcestershire (R. Meade); General Expenditure Assurance Company; Colliery Accidents, and the Lessons they Teach; American Mining (R. Knapp); Mining in Colorado—the Terrible Lode Company (E. Le Neve Foster); Ruby Consolidated Mining Company (M. Aikman); Flaggstaff Mine; Richmond Consolidated Mine Company; Javali and Chontales Mines; Doubtful Minerals and Doubts—Nomenclature: Divining Rod; Ancient Discovery of Lodes (E. Skewes); West Chiverton Mining Company (H. Mansell); Mining Investment (G. Budge); St. Patrick Mine; West Maria and Fortescue Consols; The World's Supply of Copper—Mining on the Pacific Coast—Foreign Mining and Metallurgy—Canadian Oil Wells Corporation—Improved Gas Engine—Patent Matters, &c.—Meeting of Blue Tent Consolidated, Nerburda, Birdey Creek, Patent Gunpowder, Welsh Steam Coal Collieries, Brookwood, and Bedford United Companies.

## The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JULY 23, 1875.

COPPER.	<i>b. s. d.</i>	<i>b. s. d.</i>	IRON.	<i>b. s. d. b. s. d.</i>
Best selected... p. ton	87	0	88	0
Tough cake and tile.	86	0	87	0
Sheathing & sheets...	91	0	92	0
Bolts	92	10	93	0
Bottoms	95	0	96	0
Old	80	0	80	0
Australian, Wallaroo	89	0	90	0
ditto other brands	88	10	87	0
Chili bars, g.o.b.	79	10	81	0
Wire	per lb.	0	11½	—
Tubes	0	1	0½	—
BRASS.	per lb.	—	—	—
Sheets	91—104.	—	—	—
Wire	9½d.	—	—	—
Tubes	9½d.—11½d.	—	—	—
Yellow metal sheathing	7½d.—8d.	—	—	—
Sheets	7½d.——	—	—	—
SPELTER.	per ton.	—	—	—
foreign on the spot...	23	15	0	24
" to arrive ...	23	15	0	—
ZINC.	—	—	—	—
In sheets	20	10	0	30
TIN.	—	—	—	—
English blocks ... £	83	0	84	0
Do., bars (in brls.)	84	0	85	0
Do., refined	86	0	—	—
Banca	80	0	—	—
Straits	78	0	—	—
Australian	74	10	0	75
TIN-PLATES.*	per box.	—	—	—
IC Charcoal, 1st qua.	£1	10	0	12
IX Do., 1st quality	11	16	0	18
IX Do., 2d quality	11	18	0	19
IX Do., 3d quality	11	14	0	15
IC Coke	11	3	0	6
IX Dito	11	9	0	13
Canada plates, p. ton.	16	0	16	0
Ditto, at works	15	0	15	0
QUICKSILVER (p. bot.)	9	17	6	10

\* At the works, 1s. to 1s. 6d. per ton less.

† Add 6s. for each X.

Tin-plates 2s. per box below tin-plates of similar brand.

**REMARKS.**—The past week, like many of its predecessors, has been, so far as the metal trade is concerned, without a history, and very lacking in interest. Transactions in every branch of the trade have been very few, and the quantities dealt in have been very small. There seems to be no life in any department of business connected with metals, and the prospects for the future appear to be anything but encouraging. The demand which it was hoped might spring up as the year advanced, both on home and foreign account, is as sluggish as ever; and while the sanguine took forward to the dawn of improvement after the Midsummer holidays, there are others who are of opinion that the remainder of the year will retain the character of the months that are passed. The latter seems to be the more probable event of the two. The continuance of unsettled weather imperils the coming harvest to a serious extent, and this, of course, tends to intensify the dullness which overhangs the commercial as well as the natural atmosphere by which we are now surrounded. Bank rate stands at 3 per cent., to which it was reduced on the 1st inst.

**COPPER.**—The market for copper is very quiet indeed, and has been throughout the week. The announcement of the Chili charters has been expected for some days past, but an interruption in the telegraphic communication is reported, which accounts for the non-receipt of news from the West Coast. Meanwhile operators are "looking on," an attitude which they have assumed now for a considerable time, and which they have most consistently maintained and seem likely to maintain. Quotations are very much altered. Chili bars, g.o.b., usual cash terms, are quoted 79. 10s. to 80.; English tough, 86.; best select, 87. 10s.; Sheet copper, 4½d., 90. 10s. to 91.; strong sheets, 92.; and yellow metal, 7½d. to 8½d.

**IRON.**—There is not the slightest improvement to report in the North of England. The demand there continues as quiet as ever. If it be possible to be smaller than it has been for some time past it appears to be so, and quotations are very nominal. Buyers are determined to hold back, in the belief that by doing so they will obtain supplies at a cheaper rate, and the general quietude of trade at the present moment does not compel any to come into the market and give out extensive orders. The prices of pig iron are—No. 1, 5s. 6d.; No. 3, 5s.; and forge-iron, 4s., net cash. Stocks are reported to be on the increase. In the finished iron trade business is very quiet, more especially in railway material. This has been the state of affairs throughout the year, but the present quietude is intensified, and though orders on foreign account have been looked for for some time past they have not yet come, and there does not appear to be any prospect of their coming. Rails of ordinary section are quoted about 7s. 2d. and light rails 5s. higher; merchant bars, 8d.; and plates for shipbuilding, about 8s. 10s. The support which this branch has received is hardly so satisfactory as it has been, and the dullness which is prevalent among other branches of the trade has extended to this. The large engineering establishments in the North of England have been fairly employed and still continue so to be. It seems probable that the wages question will be settled—at all events, until the end of the year, when, should difficulties arise, they are to be submitted to arbitration. It remains to be seen whether the terms that the men are willing to accept and the masters are willing to concede are such as shall be productive of a real and solid improvement in business.

If the report from the North of England be unsatisfactory that from South Wales is still more gloomy, and even those who have been most disposed to take a sanguine view of the future, and have tenaciously clung to the idea that things would eventually right themselves are beginning to lose heart, and to admit that the position of the iron trade in Wales was never worse than now. The inducements to purchasers which makers have held out by reducing quotations to the lowest possible limits have not resulted in bringing out fresh orders, and either there are no orders to give out, or intending buyers are not yet satisfied that the lowest price for the season has been reached. It would seem to have been a wiser course if the masters had agreed upon one sufficient reduction, and made it from the first—and abided thereby—the public would then probably have considered that the arrangements thus deliberately entered into closed the question, and that if iron was wanted the price named would have to be paid, but the repeated slight reductions which have been announced only tend to unsettle the public mind, and the thought still abides with intending purchasers that by waiting a little longer perhaps a further small reduction may take place. The South Wales makers are looking towards Russia for a measure of relief from their present enforced inaction. There are certain railway projects in contemplation, which may result in a few orders being placed in South Wales, but these have been expected for some time past, and have not yet come. Falling Russia, it does now seem probable that the much desired demand is likely to spring up in any other quarter for some time.

The returns of shipments abroad, from Cardiff, Newport, and Swansea, for the past month have been reported at 6546 tons, or less than one-sixth of the average returns in ordinary times. The business of the present month is not likely to exhibit any improvement upon that of the past, and it seems as if the production must be very generally materially lessened ere the demand will be found to be in excess of the supply. During the years of the inflation of the iron trade very great efforts were made both at home and abroad to stimulate production, and for a time it seemed that every exertion was insufficient to meet the emergency, but soon as the climax had been attained the drop was sudden, and trade since then has never rallied. The various agencies which had been set to work when the rage for coal and iron were at their highest are still in existence. And it is the knowledge of the fact that buyers have that competition is so great, that as much as anything else deters them from coming forward just now, believing as they do that makers are so exceeding anxious to secure orders that the longer they hold back the lower will be the price at which the orders will be taken.

The colliers in South Staffordshire have consented to a reduction in wages as the necessary consequence of the acceptance by the coalowners of lower prices for coal. There are no improvements in the demand for iron of any description. There are limited enquiries for finished iron, but at such very low prices that makers are compelled to decline the orders. As regards the future of the South Staffordshire trade, there appears to be as little hope as in any of the other iron districts in the country. The excessive rains which have been prevalent in the Midland Counties have, to some extent, hindered the progress of the small amount of work on hand, but this cause of anxiety no longer continues. The market for Scotch pig-iron opened on Tuesday last with a quiet aspect, and a limited amount of business was effected at 6s. 3d. Towards the close the market exhibited greater firmness, and closed at 6s. 6d. to 6s. 8d. On Wednesday the tone improved, and business was done at 6s. 8d. to 6s. 10d. At the close there were sellers at 6s. 6d., and buyers at 6s. 4½d. On Thursday the market was quiet, but prices were firmly maintained. To day's quotation is 6s. 6d. sellers, with buyers 6s. 3d. under.

### SHIPMENTS.

Week ending July 18, 1874. Tons 9,944

Week ending July 17, 1875. Tons 9,833

Decrease 111

Total increase for 1875 Tons 76,606

LEAD.—This metal has been without alteration throughout the

week, and is firmly held at previous quotations—good soft English pig, 22s. to 22s. 5s.; and soft Spanish, without silver, 21s. 10s. to 21s. 15s.

**SPELTER.**—Silesian on the spot is quoted 23s. 15s., and special brands at out ports 24s. to 24s. 5s.

**QUICKSILVER.**—A large business has been done in this metal at 10s. per flask, which is the closing price for Spanish.

**TIN.**—The market has been very quiet, and the transactions have been limited to the actual requirements of the trade, buyers only purchasing the quantity absolutely necessary for immediate purposes. The price of Straits has undergone no fall; for cash, 7s. is asked, and for forward delivery 7s. Australian, 7s. 10s. to 7s. 15s. It is thought probable that at current rates supplies from Australia may exhibit a considerable diminution, as it is said that only in exceptional cases can Australian tin be imported just now to leave a profit.

**TIN-PLATES.**—There is no change to report in the position of this metal, which is much neglected.

**THE IRON TRADE (Griffiths's Weekly Report).**—Friday evening, July 23: The market for Scotch pigs has been steady during the week, and closed this afternoon at about 6s. 3d. This being the same price as this day week, on the Glasgow Exchange there is no change to notice. We quote makers' No. 1 iron as follows:—Gartsherrie, 6s. 6d.; Coltness, 6s. 6d.; Calder, 6s. 6d.; Langloan, 6s. 6d.; Summerlee, 6s. 6d.; Monkland, 6s. 6d.; f.o.b. Androssan: Shotts, 6s. 6d.; Leith; Kennel, 6s. 6d.; f.o.b. Boness. Last week's shipments were 9833 tons, against 9444 tons during the corresponding week of last year. The stock in Connal's on Monday night last was 32,916 tons. There are 117 furnaces in blast, against 74 during the same time last year.

We are now better able to judge of the result of the reduction in price of iron, which took place at Quarter-day. Considerable orders have been sent down from this market into Staffordshire for bars, sheets, and hoops, but the bars are generally sent to the leading houses, who make the "marked" Staffordshire quality. All the marked houses are punctiliously firm up to Quarter-day's price, and as these brands leave very little profit, the makers are careless about extending engagements for deliveries. In second-class Staffordshire bars we have no increase of business at all. The wants of consumers of this class of iron have been mostly supplied by the Belgian, Welsh, and Middlesbrough houses. There have been some good orders sent down to North Staffordshire for hoops, and the works here in bars are more fully engaged than they were. The Warrington manufacturers, to whom the rail is in demand, are at work full time.

The rail trade is inanimate, and literally no new business done. The Ebbw Vale Company have not yet started their steelworks in Wales, but we hear that the liquidator in the matter of Fothergill and Hankey is still rolling rails. This is the state of the trade since Quarter day. The reduction in the price, we believe, has brought only very few new export orders; the rail makers were never, as a rule, working at such small profits, and the blast-furnace proprietors from Gartsherrie to Solway, in Middlesbrough, Staffordshire, and right up to Northamptonshire, including North Wales, we are sorry to say, are often working at a loss, and very few making any profit at all. This state of things is brought about by the Mines Regulation Act, the Factories Act, and the Acts of Maclennan, Burton, and Company, who have reduced the labour power of this country just one-third, and unless the working time of the men is enlarged we fear we shall not be able to report the trade in a more satisfactory state for many months to come.

**Messrs. Vivian, Younger, and Bond—COPPER:** There has been rather more business doing in manufactured copper, though for the most part under the smelters' quotations. In Chili bars there is still little passing, being relatively dearer than English, though prices are 10s. to 20s. easier than a week ago, 7s. 10s. being accepted for good ordinary brands, and 8s. 10s. for special brands. Chilian cable advises of charters for the first half of this month have been expected for some days, and until something definite is known buyers only take just what they require at once. Australian sorts are difficult of sale at quotations; Wallaroo at 8s. 10s. being too dear for general purposes compared with other sorts.—**TIN:** The market continues dull and uncertain, with small sales reported daily at 7s. 10s. to 7s. 6d. for Australian, and 7s. 6d. to 7s. 8s. for Straits. English neglected at quotations, which must be considered nominal.—**TIN PLATES:** In better demand, but without improvement in price.

**Messrs. James and Shakespeare—COPPER:** A cargo of low produce Bolivian ore, in stock at Swansea, has been sold by private contract at 16s. per unit. A few lots of bars were purchased during the week at 8s. and 8s. 10s. per ton, mostly good ordinary brands; but no great quantity can be had at these figures, although on the other hand, it is still impossible to find ready buyers thereof. The Chili telegram, now overdue, may bring advice to produce a more decided tone in the market, although it is some time since imports from that quarter have left even a trifling commission, comparing the prices paid at Valparaiso with those obtainable at the same period in this country. The leading brands of Australian about maintain their late values, but a few sales of outside marks have been made at comparatively low prices. English is unsettled, and quotations somewhat irregular; sales, however, at present minimum figures, are below the actual cost to producers, and but a trifling increase in the demand would cause an immediate stiffening in the rates.—**TIN:** English continues dull, and purchases can be made on easier terms. Foreign descriptions are nominally unchanged, but the market has been less active since Friday last, buyers being apparently desirous of waiting for the further course of events before entering upon fresh operations; and it would be impossible to effect any important sales, except at a reduction from the existing quotations, to which decline holders do not at present seem willing to respond.—**LEAD** is steady, with a fair trade doing at the current rates.

**Mr. Murrant—TIN:** Straits has, considering all the circumstances, maintained its value pretty well in the past week, although there seems to be an utter absence of "go" in the article, and transactions in it threaten to resolve themselves into an unpleasant copy of those in its sister metal copper; but there will probably always be a balance of speculation (in ordinary times) in favour of tin; sales, however, at present minimum figures, are below the actual cost to producers, and but a trifling increase in the demand would cause an immediate stiffening in the rates.—**TIN PLATES:** Foreign maintains its value abroad, but to effect sales here a reduction would have to be made. English is not so much pressed for sale, but some brands are quoted materially lower.

**Messrs. Henry Rogers, Sons, and Co.—IRON:** Scotch pigs maintain their price, but business is not active. North of England iron is lower, the demand being exceedingly slack. From Staffordshire the reports are not encouraging. Some of the "list" houses have an accession of orders since the drop on Quarter-day, but second-class makers are by no means busy, and lower quotations are made week by week to meet the slack demand that exists.—**COPPER:** This metal continues to fall, though only fractionally, but concessions have to be made with each new transaction. Manufactured is now obtainable at 90s. for Indian sheets, and tough and select only move off in small quantities at 86s. and 87s. respectively, while at 86s. for Burma and 88s. 10s. f.o.b. for Wallaroo, there is only a limited trade. Favourite brands of Chili have changed hands at 80s. 10s. only, while g.o.b. bars are reported as low as 7s. Buyers now bidding 7s. only; the continued absence of West Coast news by cable tending to the depression of the market.—**TIN:** The advance last week has been lost. Sales of Straits the past few days are reported as low as 7s. 10s., and Australian at 7s., while English is offered in some quantities below the market, and without finding buyers.—**QUICKSILVER** is reduced to 10s.—**SPELTER:** Foreign maintains its value abroad, but to effect sales here a reduction would have to be made. English is not so much pressed for sale, but some brands are quoted materially lower.

**Messrs. French and Smith—in IRON** there is no change to notice.—**COPPER** continues dull, and price flat.—**TIN:** Foreign is slightly easier; English is very quiet.—**TIN PLATES** unchanged, and slow.—**LEAD** maintains its improvement and is very firm.—**QUICKSILVER** is reduced to 10s. per bottle.

**Messrs. Sanford and Bird—COPPER:** This market remains without change, and there is little doing in either manufactured or foreign.—**TIN:** A slight improvement in prices during the week has been followed by a relapse, and the market close weak. Australian tin is nominally 7s., and Straits 7s. 10s., with little doing.—**TIN PLATES** steady.—**LEAD** is firm, a good business having been done at 22s. 5s. for pigs.—**SHEET ZINC** is firm.

**Messrs. Pixley and Abel—GOLD:** The arrivals of gold from New York since our last circular amount to about 450,000. The Glenlora, from New Zealand, brought 20,000, and the Lombardy, from Alexandria, 105,000 sovereigns. The above, with some Japanese gold, and sundry amounts from the Continent, have been taken to the Bank of England, about 740,000, having been so disposed of, in the absence of export demand: 35,000 sovereigns have been taken from the Bank for Lisbon.—**SILVER:** The limited amount of silver by the West India steamer was sold at 55½d. per oz. standard. The market is now, however, firmer, owing in a measure to the higher rate obtained for the India Council bills, and our quotation is 55 11-16ths per oz.

of the mine is being opened up, where the ground is dry for a depth of 60 fathoms. Lead is being gradually accumulated for the resumption of smelting operations at an early date. According to the most reputable authorities, there is every indication that this group of mines, now being opened up by the additional capital, guided by practical intelligence, will prove much more remunerative in the future than in the past.

In Silver Mines, the leading features have again been the demand for Richmond and Eberhardt, in which large transactions have been recorded. Richmond Consolidated, 13 $\frac{1}{2}$  to 13 $\frac{1}{2}$ ; cablegram received—Week's run, \$45,000. Dore bars valued at \$20,000 were forwarded for sale last week. The returns this week are still below expectations; the cause, we understand, being the difficulty of obtaining skilled smelters to take the place of the men who are still on the sick list.

The summer heats, added to the usual trials to health in the smelting operations, appear to have thrown more men out of work this season than was the case last summer; it is, probably, due to this cause that the best runs in past years have been obtained from August to January. It is probable that results from the new discovery of ore will be obtained earlier than was anticipated, as we understand that in addition to the drift started from the old workings to intercept the new bed vein laid open from the workings in the Eureka Consolidated the vein will be followed direct, arrangements having been made with that company for this to be done. The refinery this season has produced, irrespective of the lead, gold and silver bars to the value of \$299,000. The make of bullion for the same period is \$472,000, the total bullion produced since the end of last half-year being \$693,000. Eberhardt and Aurora, 8 $\frac{1}{2}$  to 8 $\frac{1}{2}$ ; large investment purchases have been made upon favourable anticipations as to the net result of the last half-year's operations, coupled with the fact that the ore is fully maintaining its improved grade. The unfavourable feature in this department has been the further decline in Flagstaff shares. The rumours which had previously obtained (referred to last week) as to the unfavourable character of Mr. Woodfield's report proved to be only too well founded. The report, which appears in another column, has caused no small amount of surprise, describing the mine to be in a condition so totally different from all former representations. The shares during the week have declined from 1 $\frac{1}{2}$ , 2, to 1 $\frac{1}{2}$ , 1 $\frac{1}{2}$ .

In Hydraulic or Gold-Washing Companies business has been somewhat restricted. Sweetland Creek have been enquired for since the telegram announcing the clean-up, and have improved, closing firm at quotations. Birdseye Creek and Blue Tent unchanged, the latter are raising capital upon debentures to complete their ditch. Cedar Creek, a shade lower, and business in them has been restricted.

Blue Tent, 4 $\frac{1}{2}$  to 5 $\frac{1}{2}$ ; in another column appear particulars of an extraordinary meeting held on Monday last, to pass a resolution authorising the Board to raise 15,000*l.* on debentures to complete the ditch.

The Chairman stated that not more than about 9000*l.* of this would be required, and his remarks on the future of the property are worthy of consideration, for when the company have finished their 27 miles of ditch the property will stand second to none in California for productiveness and facilities for working, while the quantity of water available is more than any English company has yet had an opportunity of using. Birdseye Creek, 1 $\frac{1}{2}$  to 2; the annual meeting was held on Thursday, and particulars appear in another column. The result of the year's working is not unsatisfactory considering the limited amount of water available. The prospects for the coming year are better than at any former period of the company's existence, and with an average water season the result should be satisfactory. The dead work, in the way of tunnels, &c., necessary to open the claims, has been about finished, and as hitherto this expense has been paid out of revenue, the completion of the work will increase the profits by a considerable amount.

Sweetland Creek, 3 to 3 $\frac{1}{2}$ ; a telegram from Mr. McLean, received on Wednesday, announces the result of the first clean-up since the new contract for water was obtained, the remittance being 1400*l.* He has before advised that this run was entirely and exclusively on side dirt. The profit, therefore, may be considered as remarkably good, as from the proceeds of the run Mr. McLean has had to meet the whole expenses of the new pipe to connect the ditch with the company's workings. The item of extra expenses is heavy, consisting of the cost of some 1800 ft. of 30-in. and 22-in. pipe, with all fittings and charges of erection. Cedar Creek, 8 to 1 $\frac{1}{2}$ ; Col. Lullum reports that the water season is rapidly drawing to a close. He has concentrated work on the Yankee claim, and will continue washing there the remainder of the season. Fair progress is being made in the Yankee Tunnel.

Colorado Terrible, 3 to 3 $\frac{1}{2}$ ; it is expected that the "black mail" suit will be settled very shortly; already the local Judge has given the company permission to remove all the ore they had on hand and broken on the mine previous to the injunction; he has also ordered the claimant, or jumper, to raise his bond to \$30,000, or in default of which the Judge has given notice that he will remove the injunction on the company's property. This latest intelligence, coupled with the former news that an injunction had been granted against Mr. Haunill—the claimant—leads to the supposition that there is some interest at work to obtain justice for the company.

In Foreign Gold Quartz Mines, St. John del Rey has advanced to 400, 410; Don Pedro flat at 4 discount. Almada and Trito, 8 to 1 $\frac{1}{2}$ ; the profit for June was \$1621; but for the six months ending June 30 the profits amounted to \$59,253, or 12,000*l.* sterling. Chontales, 2 to 3 $\frac{1}{2}$ ; the reports were received on Saturday last for the month of May, and showed a profit of nearly 200*l.* on the working cost at the mines. The pneumatic stamps were completed, and the wet season had shown signs of its approach by some slight showers. The San Benito Mine was improving, and the manager writes that he expects to do even better in the coming month. Javali, 8 to 1 $\frac{1}{2}$ ; Frontino and Bolivia, 8 to 1 $\frac{1}{2}$ ; Port Phillip, 8 to 1 $\frac{1}{2}$ ; Sierra Buttes flatter at 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; ditto Plumas Eureka, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ . Independence, 2 $\frac{1}{2}$  to 3; the advices from this mine continue satisfactory. It is expected that the North Cliff ledge will shortly be intersected by the cross-cut, which at the date of last advices had been extended 60 ft. towards it. This ledge is one of the richest of the Sierra Buttes ledges, and if it is cut rich in the Independence this mine will at once become one of the most successful gold quartz undertakings in California.

A company has been lately formed under the title of the Oregon Hydraulic Gold Mines, to purchase and work some auriferous gravel deposits in Josephine county, Oregon; they are of considerable extent, well situated for working, and a good amount of water can be brought to bear at a small expense. The company, we are informed, have this week taken over the property, consisting of the gravel and ditches, and have commenced fitting up in readiness for next water season. We understand that it has been more favourably reported on and recommended by competent persons. We shall obtain the report, if possible, and print it in a future number, for the information of our readers.

Van Consols continue firm, at 2 to 2 $\frac{1}{2}$ ; the main shaft is down to the required depth for cross-cutting through the lode. The drawing shaft is fast approaching completion—nearly 40 fms. of it are already completed. Great West Van, 10s. to 15s.; works are being pushed on with vigour, and good progress being made. Pennerley, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; the workings at Potter's Pit are laying open very good ground. No. 1 winze, in bottom of the 65, still maintains its value—4 tons of lead per fathom. The cross-cut in the 75, towards the lode, is progressing well. The old mine is looking more favourable. Bog, 8 to 1 $\frac{1}{2}$ ; the mine is looking well, and several points presenting a very favourable appearance. The bottom levels promise an early improvement. Assheton, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ , and enquired for.

Great Wheal Vor, 8 to 1 $\frac{1}{2}$ ; the mine is in fork to the bottom, and as far as can be at present ascertained the lode looks promising for a good mine in depth. In another week or ten days the shaft will be ready to commence sinking. Penstruthal, 8s. to 10s. Cathedral, 28s. to 30s.; the sinking of the engine-shaft, which has been retarded by the fixing the plunger-lift, will be resumed next week; the various operations are producing 75*t.* of copper ore per fathom, exclusive of the tributaries' bargains.

Subjoined are the closing quotations:—

Ashton, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Bog, 10s. to 12s.; Carn Bras, 24 to 26; Devon Great Consols,

8s. to 8; Dolcoath, 27 to 29; East Van, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; East Lovell, 6s. to 7s.

Great Caradon, 8s. to 1; Great Laxey, 14 to 14 $\frac{1}{2}$ ; Hington Down, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ .

Marke Valley, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Pateley Bridge, 7 to 7 $\frac{1}{2}$ ; Pennerley, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Parv Mountain, 11s. to 13s.; Penstruthal, 9s. to 11s.; Roman Gravels, 12 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Tankerville, 10 $\frac{1}{2}$  to 10 $\frac{1}{2}$ ; Tinctor, 17 to 19; Van, 21 to 25; Van Consols, 1 $\frac{1}{2}$  to 2 $\frac{1}{2}$ ; West Tankerville, 14 to 14 $\frac{1}{2}$ ; Wheal Grenville, 24 $\frac{1}{2}$  to 3; Great Wheal Vor, 3 $\frac{1}{2}$  to 5s.; West Bassett, 4 to 4 $\frac{1}{2}$ ; West Chiverton, 16 $\frac{1}{2}$  to 17 $\frac{1}{2}$ ; Birdseye Creek, 2 $\frac{1}{2}$  to 3; Chontales, 3 $\frac{1}{2}$  to 5 $\frac{1}{2}$ ; Don Pedro, 1 $\frac{1}{2}$  to 3; Eberhardt and Aurora, 8s. to 8 $\frac{1}{2}$ ; Emma, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Flagstaff, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Independence, 2 $\frac{1}{2}$  to 2 $\frac{1}{2}$ ; Javali, 7s. to 9s.; Last Chance, 7s. to 11s.; Malpaso, 5 $\frac{1}{2}$  to 7s.; Malabar, 5 $\frac{1}{2}$  to 7s.; New Querada, 3 $\frac{1}{2}$  to 4; Rica, 7s. to 9s.; Richmond Consolidated, 13s. to 13 $\frac{1}{2}$ ; St. John del Rey, 400 to 410; Sweetland Creek, 3 to 3 $\frac{1}{2}$ ; San Pedro, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; Sierra Buttes, 1 $\frac{1}{2}$  to 1 $\frac{1}{2}$ ; South Aurora, 8s. to 10s.; Tecoma, 5s. to 7s.; United Mexican, 2 $\frac{1}{2}$  to 3; Blue Tent, 4 $\frac{1}{2}$  to 5 $\frac{1}{2}$ .

TANKERVILLE.—The monthly sale of 150 tons of lead ore fetched on Thursday 14 $\frac{1}{2}$ . 18s. per ton, equal to 2235*t.* The mine maintains its great productiveness, and shows a marked improvement in depth. It is expected that the quarterly dividend will be paid at the usual time next month.

ROOKHOPE.—The stope in the 15 fm. level is worth 2 tons of lead ore per fathom; much better than for some time past. The stope in the 25 is worth 20 cwt.s. per fathom, and in the 42 15 cwt.s. per fathom. A piece of ground will soon be opened in the adit which will yield a great deal of ore. In the last month 14 men have broken 20 tons, and with a larger number of men employed a greatly increased return could be made.

PROVIDENCE MINES.—We are requested to state that an error appeared in the *Cornish Telegraph* of Wednesday, stating "Providence Mines share dull at 11s." This price must refer to some other mine, as there are 51 men on tribute, at 15s. in it, reckoning tin at 40*t.* a ton, while an increase in the returns may be expected. The quotations for shares are about 3*s.*, but no business doing.

BEDFORD UNITED.—In another column we have referred to the proceedings of the general meeting, held on Wednesday, and we are officially advised that the prospects of this mine are so much improved as to induce the belief that dividends will be resumed at a not far distant date. Since 1865, when operations were commenced on the north lode, the shareholders have been called upon to contribute a large sum of money, but as only 1*s.* per share has been required in the last 12 months to meet deficiencies, it must be evident that the produce of the mines has increased, and that the returns have not been far short of the actual expenditure. In the last four months a satisfactory profit has been made, and there is every reason to believe that this will be exceeded by the meeting in November next. When it is remembered that the Wheal Marquis lode gave the shareholders in this company 54,000*t.* in dividends on an outlay of 27, 6s. 8d. per share, it may reasonably be assumed that a bright future is still in store for them. We believe that the affairs of the company are well conducted, and that committee, agents, secretary, and all concerned, have been assiduous in their endeavours to bring the mine again into a profitable position.

CHAPEL HOUSE COLLIERY COMPANY.—Mr. Thomas Thompson, jun., writes—"With regard to this colliery, there is but little to report beyond that it continues on in the even way of its success, the output being as high as usual—about 6500 to 7000 tons per month. The manager reports of the new works that the engine chimney is now finished, two new boilers are in position, and the completion of the engine house is being proceeded with as quickly as possible. The brick making has been rather delayed by the wet weather, but will again be in full swing as soon as a change sets in. The new 16 ft. pit is now down 135 yards, and the sinking is progressing with satisfactory speed. It is anticipated that it will be completed by October next year, and very soon after a large increase in the output will be made. In fact, the whole of the new plant is being laid out with a view to raising 100*t.* tons per day, which would yield profits sufficient to pay very large dividends. The manager also writes he is doing a brisk business in the coals at good prices. Taking everything into consideration, it would be difficult to pick up shares offering better inducements for investment. The debentures (7 $\frac{1}{2}$  per cent.) have been very well taken up, and as the proceeds will for the most part be utilised in increasing the plant, and more speedily attaining the large output mentioned above, the security will be improving everyday. I can most strongly recommend these debentures to my clients."

CHAPEL HOUSE COLLIERY.—The new shaft is down about 135 yards, and is being bricked up. The new chimney is finished, and the two new boilers will be put in their places. The enlarging of the reservoir and the building of the engine-house are being proceeded with, and the company is doing a large trade.

At the Blanzy Mines, in France, the "Levet" Rock Drill has superseded all others. The managers of those extensive mines (so well known throughout Europe) are employing the "Levet" exclusively at their works.—See advertisement in the Supplement to this week's Journal.]

#### COALS.

THE GUARDIANS OF THE POOR of the KINGSTON UNION will, at their meeting to be held on Tuesday, July 27, proceed to consider TENDERS for the SUPPLY of FOUR HUNDRED TONS of SCREENED WALLSEND COAL, to be delivered on the Workhouse premises.

Tenders must be delivered under cover, addressed to me, at the Workhouse, Kingston-on-Thames, not later than 10 A.M. on the 27th instant. The Guardians do not bind themselves to accept any tender.

The Norbiton Stat on of the L. and S. W. R. is immediately opposite the Workhouse. Board Room, Kingston Workhouse, Coombe-lane, 14th July, 1875.

#### SALE OF BROWN-COAL MINES.

THE BOARD OF ADMINISTRATION of the DUX-BRUK KOMOTANER BRAUNKOHLEN-BERGBAN-ACTIENGESSELLSCHAFT (DUX BRUK KOMOTAN BROWN COAL MINING JOINT STOCK COMPANY) hereby announces that, in accordance with a resolution of the General Meeting of June 2<sup>nd</sup> instant, A PART OF THE VAST MINING PROPERTY of this company is to BE OFFERED FOR SALE.

Purchasers are requested to apply for the terms of sale, &c., to the Bergwerks Direction (Mining Directory) of the Company in Brux : or to the Central Bureau in Prag (Ferdinand-strasse, 25). Payments may be made in part in stocks of the company.

Written enquiries will be promptly answered.

THE BOARD OF ADMINISTRATION.

THOMAS CLEMENT MUNDEY, Deceased.

PURSUANT to an Act of Parliament of the 22nd and 23rd Victoria, cap. 35, intituled "An Act to further Amend the Law of Property and to Relieve Trustees," notice is hereby given, that ALL CREDITORS and other persons having any CLAIMS or DEMANDS upon or against the Estate of THOMAS CLEMENT MUNDEY, late of Percy Villa, Upper Tooting, in the County of Surrey, Esquire, and of No. 13, Angel-court, in the City of London, Stockbroker, deceased, who died on the 27th day of May, 1875, and whose Will was proved in the principal registry of Her Majesty's Court of Probate on the 26th day of June, 1875, by Charles Robert Huggins, Henry John Whaley, Stephen Catterton, and Francis Playford, Esquires, four of the Executors therein named, are hereby required to SEND PARTICULARS in writing of such CLAIMS and DEMANDS to me, the undersigned, the Solicitor of the said Executors, or before the 31st day of August next, after which day the said Executors will proceed to DISTRIBUTE THE ASSETS of the said Deceased, having regard only to the claims and demands of which they shall have notice.

J. RAND BAILEY, 8, Tokenhouse-yard, London, E.C., Solicitor to the said Executors.

Dated this 3rd day of July, 1875.

IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867;

AND OF THE

FAIRBAIRN ENGINEERING COMPANY (LIMITED).

THE CREDITORS of the ABOVE-NAMED COMPANY are required, on or before the 2nd day of August, 1875, to SEND THEIR NAMES and ADDRESSES, and the particulars of their DEBTS or CLAIMS, and the NAMES and ADDRESSES of their SOLICITORS (if any), to Sir THOMAS FAIRBAIRN, Baronet, and AUGUSTUS HENRY NOVELLI, Esquire, the Liquidators of the said company, at 16, New Broad-street, in the City of London; and, if so required by notice in writing from the said Liquidators, are by their solicitors, to COME IN and PROVE their said DEBTS or CLAIMS, at the Chambers of the Vice-Chancellor Sir RICHARD MALINS, at No. 3, Stone Buildings, Lincoln's Inn, in the county of Middlesex, at such time as shall be specified in such notice; or, in default thereof, they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such debts are proved.

Friday, the 6th day of August, 1875, at Twelve o'clock at noon, at the said Chambers, is appointed for hearing and adjudicating upon the debts and claims.

ALFRED RAWLINSON, Chief Clerk.

CUNLIFFE AND BEAUMONT, 43, Chancery-lane.

Dated this 9th day of July, 1875.

BOLCKOW, VAUGHAN, AND CO. (LIMITED) REQUIRE

A COMPETENT PERSON to TAKE the CONTROL of their IRON WORKS, BLAST FURNACES, and MINING OPERATIONS.

Applications to be addressed to the Chairman, Nos. 18 and 19, Fenchurch-street, London, E.C.

TO CIVIL ENGINEERS, LAND AGENTS, & SURVEYORS.

A GENTLEMAN (middle aged) REQUIRES EMPLOYMENT.

With a view to PARTNERSHIP. Good references and testimonials.

Address, "Time," MINING JOURNAL Office, 26, Fleet-street, London, E.C.?

FOR SALE, THIRTY (30) LLANARMON LEAD MINING SHARES, at a reasonably low price. The mine is improving, and leading to large discoveries of lead.

Address, "A. L." MINING JOURNAL Office, 26, Fleet-street, London, E.C.

FOR SALE, ONE HUNDRED ROSEWALL HILL AND RANSOM UNITED, at 3s. 6d. (or part).

Address, "H. L." 275, Strand, London.

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## NOTICES TO CORRESPONDENTS.

"Much inconvenience having arisen in consequence of several of the numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference."

**ANGLO-ITALIAN GOLD MINING COMPANY.**—Can any of your readers give a shareholder information relative to this mine or company?

**SUPERHEATED STEAM.**—*"A. M. Z."* (Junior Carlton Club) would be glad to learn through the Answers to Correspondents the best work to consult respecting the properties and uses of superheated steam—some full scientific and practical work.

**LEAD SMELTERS.**—*"E."*—The address of the South Wales Smelting Company is Lead Works, Swansea. They seem to have taken over the works lately held by Messrs. Stock and Co.

**THEORETICAL MINING.**—*"C. H."* (Newlyn East).—There is no one book that would give you such knowledge of mining as would fit you more quickly for an agent. Lockwood's catalogue, which can be obtained on application will give you the titles and prices of many useful books.

**SEWING MACHINE MOTOR.**—Can any correspondent state whether there is a sewing machine motor in the market at a price not exceeding a couple of guineas, and to be worked by steam at low pressure; if so, at what expense per day could it be worked, and where is it to be obtained?—*K. H.*

**NEW ROUTE TO THE CONTINENT.**—*"H. B."* (Dublin).—It may be presumed that the suggestions of Mr. W. T. Mulvany, of Düsseldorf, that communication between England and Flushing would facilitate the establishment of an Oriental traffic through Germany instead of France has influenced the opening of the new route between Sheerness and Flushing, and any steps which may be taken to open up (by issuing cheap through tickets) the land lines suggested will be duly noticed in the Journal. Mr. Mulvany's name does not seem to be connected with the new enterprise.

**UNCHANGEABLE VARNISH.**—Can any correspondent inform me, through the Journal, whether there is any varnish that can be used over a wall paper to protect it from the action of sulphur fumes. The quantity of fume is exceedingly small, being only that which escapes from water charged with sulphuretted hydrogen, but of this there is always a surface open of something like 1500 square yards. It must be a varnish easily applied, and not too costly, as the bath-rooms in which the paper is used have frequently to be re-painted and re-decorated—once each year at least.—*Budapest*, Austria.

**HAWKE COLLIERY.**—Can any reader give me some information respecting this company? A dividend was declared in March last, which dividend I have not yet received, and can get no information about it.—*H. S.*: *Gosport*.

**DIAMOND FUEL.**—It was stated some time since that the Diamond Fuel Company intended to establish depots in the London suburbs for the sale of the fuel for domestic purposes, and as now is about the season in which consumers lay in their stocks for the year I should be glad to learn whether anything has been done in the matter. The company's fuel could, as I understand, be sold in every suburb within 20 miles of London at £1. per ton, and leave a large profit for the shareholders. At this price 100,000 tons could be sold within the next two months, and a very satisfactory dividend could be given to the shareholders. Why is this not done?—*D. P.*

**LOCOMOTIVE ENGINES.**—The Stockton and Darlington Railway was opened on Sept. 27, 1825: a locomotive built by Richard Trevithick, the Cornishman, was run on the Merthyr Tydfil Railway, in 1804, and was the first locomotive. In 1812 Murray's engines were running on Blenkinsopp's Railway between Middleton and Leeds; in 1813 Hedley's engines were running on the Wylam Railway, near Newcastle-on-Tyne; and on July 25, 1814, George Stephenson commenced running his first locomotive on the Killingworth Colliery Company's Railway, also near Newcastle-on-Tyne. Murray's locomotives were the first used on a commercial and permanent basis. The Stockton and Darlington Railway Company were the first to use locomotives for conducting a passenger traffic.

**Received.**—*"Engineer"* (New York).—The particulars will be very acceptable.—*E. W.*—*"J. C. G."* (West Great Work)—*"W. S."*—*"J. M."*—*"Stannum"*—*"Shareholder"* (Wyre Valley) should write to the Secretary—*"Inventor"* (Leeds): We never published such a statement.—*"S. T."*: We will obtain the information and forward it.—*"M."*: Elsewhere referred to.—*"X. L."*—*"Shareholder"* (West Chilvers)—*"Old Bird"* (Canadian Oil Well Corporation): The letter is far too long for a newspaper: it should be published as a pamphlet.—*"Shareholder"* (Roman Gravels)—*"J. R."*—*T. A. Readwin* (Gold in Wales): Next week.—*"Practical Miner"* (Coal in Nova Scotia): Next week.—*W. White* (the Diamond): Next week.

THE MINING JOURNAL,  
Railway and Commercial Gazette.

LONDON, JULY 24, 1875.

## THE CONFERENCE OF THE MINERS' NATIONAL ASSOCIATION.

An adjourned Conference of delegates belonging to the Miners' National Association took place at Leeds last week, the principal business being the formation of a National Union composed of the various local societies or organised bodies of miners employed at all the mines in the kingdom. Rather less than 60 delegates were present, representing—on paper, at least—136,200 persons. Mr. MACDONALD, M.P., who, not being delegated from any particular body, may be said to have represented himself, occupied the chair as president of the Association, and indulged in one of his usual orations, in which self-glory was the leading feature. Of course the "Press," which for some reason or other does not appear to take kindly to Mr. MACDONALD, came in, as might be expected, for the usual quantum of abuse, everyone connected with it, including the Editor of the *Times*, being fools when placed in comparison with Stafford's irrepressible and windy representative. The object of the meeting, said the Chairman in his opening speech, was to bind the miners more strongly than they had yet been, so as to ensure their receiving due respect from the employing classes of the country, and for the purpose of putting an end to those conflicts between labour and capital which had been so injurious to both masters and men. This was to be done by a combination of all the working miners in the country. If it was really the wish of the Conference to do away with such costly strife as results from strikes and lock-outs, we certainly think that the way in which it was proposed to carry out that object was the very one most likely to have a decidedly contrary effect. To say that the best way to conciliate the employers of labour and do away with disputes was by forming a powerful confederation of the Unionists throughout the country was paying a very poor compliment to the common sense, let alone the intelligence, of those who have to find employment for the mere wielders of labour. It is too absurd—too transparent—to suppose that there can be any other object in banding together the various miners' associations in the kingdom than that of obtaining by the mere force of numbers what could not be expected as a matter of individual right. This is evident from the rules drawn up by the committee for the adoption of the National Union, for in one part of Rule 2 it is stated that it shall be the object of the confederation "to use every legitimate means to secure the highest benefits to the workmen, and also obtain compensation for accidents where the employers are liable." If this is conciliatory we admit it we do not know the meaning of the word, for it appears to us to be intended as thoroughly aggressive. But what is desired appears more apparent, or even transparent, as we go through the rules, for one of them (No. 8) states that every member of the local association shall pay one penny per month for the purpose of forming a central or general fund, "the object of which shall be to support the members who may be thrown out of employment in all cases where the employers will not allow the matters in dispute to be settled by conciliation or board of arbitration." In plain words, whenever the workmen consider it necessary to make certain demands, either as regards wages or anything else, the masters must either submit to the dictation of their workmen, or, refusing to do so, the latter will be able to strike, being assured of a weekly stipend from the fund specially provided for the purpose by the National Union. Such a proviso is made by Rule 13, as follows:—

"That wherever the members of any local association or district connected with the National Union are refused the privilege or advantage of negotiating with their employers for a settlement of any dispute in keeping with Resolution 8, they shall receive from the Central Fund the sum of 7s. 6d. per member per week, which allowance shall be irrespective of any other support that may be given by their local associations, or by any other means whatever."

If this is what is meant by conciliation, it is certainly a very peculiar way of carrying out that policy, and we have little doubt but those who will be most affected by the latest movement on the part of the miners will fully appreciate the intentions of the National Union. They will readily perceive that the Union which is made to appear as being founded for the purpose of doing away with all disputes, and leading to a harmony of action and feeling between masters and workmen must have a decidedly contrary effect. The men will look forward to being placed in a far more

powerful position than they have ever been, so that the Union, instead of fostering a kindly understanding between the wages payer and the wages receiver, cannot fail to widen considerably the gap which in many instances even now divides the two. The time for the movement, too, is most inopportune, seeing that the coal trade is in a depressed state, and that a reduction of wages is being proposed in almost every mining district in the kingdom. This, however, will give the new federation an opportunity of testing their strength against the colliery owners, and that may be something to make a start with.

As we have often stated, there can be no objection to working men combining together for all legitimate purposes, and the same right, of course, must be accorded to capitalists who have invested their money in works in which labour plays an important part. We, therefore, cannot but believe that the latter, in their own defence, will confederate for the purpose of meeting on something like equal terms the power of the new Union, which it is pretty evident must be aggressive if it is to be anything the men will care for. It is needless to speculate as to what would be the result of a collision between a confederation of colliery owners and their workmen. We have seen the effects of such a meeting quite recently in South Wales, and we also know that in many of our mining districts the masters have formed associations with large capital for the purpose of combating any aggression on their rights on the part of miners' associations, and nothing will be easier than for them to combine with other similar bodies to meet any attempt at coercion which may be made by the new Miners' Union owing to its numerical strength. Acting simply on the defensive the employers of labour, in our opinion, will be in a position to maintain their rights, and at the same time act fairly and uprightly towards those who have to depend upon them for the support of themselves and families. We, therefore, most strongly deprecate the recent action taken by the miners' leaders, considering that the course they have thought fit to adopt at such an unfavourable season will tend to disturb the amicable relations now existing in many of our colliery districts between the Unionists and their employers, and which it is so desirable to maintain.

It appears that although the delegates were called together for the purpose of establishing the National Union, other interesting matters were also discussed, principally for the special benefit of Mr. MACDONALD, and in praise of what he had done for the working classes whilst a member of the House of Commons. On the second day, before the ordinary business was commenced, the honourable gentleman drew attention to the Bills introduced by the Home Secretary with regard to the labour laws, and which he believed would tend to the elevation of the working classes. At the same time he spoke in disparaging terms of the party who had brought forward the measures of which he thought so highly. He was followed by Mr. BURT, M.P., who, in his quiet and unostentatious manner, delivered a deserved rebuke to the member for Stafford, by saying that he thought the references to the party side of the question would have been quite as well left out of the speech, and left unsaid. On the evening of the same day there was a special meeting of the delegates with respect to the opposition by Mr. MACDONALD and Mr. BURT to the grant to the Prince of WALES for his visit to India. A resolution was agreed to regretting that the statements of the two gentlemen had been called in question when they said that the working classes were opposed to such grants. The meeting also begged to say in the most unqualified manner that in this matter they accurately and fairly represented the feelings of the working classes. Here we had another piece of monstrous presumption on the part of 55 persons, who undertook to represent without the slightest authority the views of the working men of the country. However, Mr. MACDONALD was partly whitewashed with respect to his oft-repeated declaration in the House of Commons that he spoke for the working classes of the country—that is, of course, as far as 55 very ordinary men could perform that somewhat onerous operation, and who undertook to speak the views of vast masses of men they had never seen or heard of. But modesty is not one of the virtues for which miners or their representatives are credited with. Several rather violent speeches were then indulged in, which led to one of the delegates remarking that the simple vote of confidence to the two members had been taken advantage of by the majority of the speakers to air their sentiments on republicanism.

The National Union was then formally established, operations to commence from August 9. The various officials were elected, and it was agreed that whilst on the business of the Union they should be allowed 12s. per day, and second-class railway fares. Appropriately enough, the conference closed with a resolution pledging support to the miners in Warwickshire who have been on strike for several weeks against a reduction of wages. There were, however, a variety of topics touched upon during the conference, amongst others the purchase of collieries by the miners, so as to be independent of the present owners and capitalists; but no allusion was made to what might have struck any ordinary person, that if the miner invests in colliery property it must be from the wages paid to him. It would be premature as yet to state what of good or evil will be accomplished by the New National Union, but we feel assured it will be the means of causing colliery proprietors in most parts of the country to confederate together in defence of their own interests, and of the interests of those who are not connected with any Miners' Association, so as to ensure full liberty of action to all.

## COAL CUTTING BY MACHINERY.

Although many have expressed their anxiety to ascertain the practical value of coal-cutting machinery, it is the Midland Institute of Mining Engineers alone that has done anything really useful for solving the questions involved. The natural jealousy of inventors prevented the handsome premiums offered some seven or eight years since by the South Lancashire and Cheshire Coalowners' Association producing any important result, and it was doubtless the same feeling that led to a similar failure in 1872, when the 500/- premium was offered by Mr. W. FIRTH, of Leeds. Now, inasmuch as it was acknowledged that the gaining of one or other of the premiums mentioned would have gone far to secure the adoption of the machine receiving the award, it might have been thought that many would have been ready to risk having to encounter some few objections, but it must be remembered that the practical success of machine coal cutting not having then been demonstrated there was a very prevalent notion that an unbiased opinion could scarcely be hoped for. At present the case is entirely different, and it is probable that if the whole of the coalowners were now to raise a fund of (say) 2000/- to offer prizes similar to those of the South Lancashire and Cheshire Coalowners' Association, but of 1000/-, 500/-, and 200/- (leaving 300/- for expenses), there would be plenty of competitors, especially if it were provided that none but machines which were in every day use, and had been so for not less than two months, should be allowed to compete, and that the awards should be made upon the results obtained in the several collieries in which the machines were practically worked.

It is this visiting jury system that will give such great value to the report of the Midland Institute Committee, and the only cause for regret is that they had not 750/- instead of 70/- at their disposal for expenses. Since its appointment the committee has done a considerable amount of work, having visited several collieries in Yorkshire, Lancashire, and elsewhere to inspect machines in actual work, and, as it is intended to continue the tours of inspection so as to include every colliery district, the report may fairly be expected to contain a most interesting account of what is really doing. But, valuable as will be the labours of this committee which the Midland Institute of Mining Engineers has appointed, there are many who will consider that it has too much of a local character for the opinions which may be expressed in the report to command full weight throughout the country, and it is for this reason that it has been suggested to form a prize fund embracing the whole kingdom, and to double the very liberal offer of the South Lancashire and Cheshire Coalowners' Association in the amounts of money to be awarded. Were such an arrangement carried out the Midland committee would, no doubt, consent to co-operate by acting upon the larger

committee which would have to be formed, and the general committee, representing every district, would have universal influence. All such matters as these, however, involve considerable labour in organisation, so that there might be no apprehension as to getting the members together; but in this case no such difficulty exists for the Committee of the Midland Institute of Mining Engineers already forms the nucleus which has only to be utilised, and by undertaking the organisation of the general committee the prominence and influence of the Institute would be so largely increased that there is ample inducement to undertake it. It is stated, moreover, that the desire to introduce machine cutting is steadily progressing, and that Messrs. NEWTON, CHAMBERS, and CO., and the Wharncliffe Silkstone Company have already determined to adopt it, so that it is evident that the competition would be productive of results which would be necessary.

## COAL AND IRON IN AMERICA.

Three or four circumstances may be noted in connection with current events in the United States as being of special interest to the English coal and iron trades. The first is the termination of a great strike in the important coal regions of Pennsylvania. This strike extended over so many weeks, and reduced to profitlessness so many men, that to June 19 this year the production of anthracite coal in Pennsylvania declined to the extent of 2,779,545 tons, as compared with the corresponding period of 1874. Not only were the profits of both employers and employed reduced, but the strike did not terminate without bloodshed, and even a slight loss of life. However, peace was at length made somehow, and the men on strike have generally returned to work at the reduced wages for which the masters contended. The result is that trade and enterprise promise to revive in Pennsylvania, and in proof of the restoration of road Company, which had exhibited a great deal of depression, have again begun to move slightly upwards. The alarming conflict which has now happily terminated in the Pennsylvanian coal trade would appear to indicate a universal discontent among working miners in both the Old and the New World. Mr. HALLIDAY and his fellows have been fond of pointing to the United States as a land of promise to the working man—as the country, *par excellence*, from which John Bull ought to take pattern. Well, we cross the Atlantic and enter the United States. We find universal suffrage and the ballot in full swing in General WASHINGTON's model Republic, and we find them accompanied also by plenty of corruption among the class of professional politicians to whom it is to be feared they give rise. But when we come to examine the relations of American employers and American employed, we find that strikes are by no means unknown among American workmen, and in the Pennsylvania coal trade there has been quite a deadly feud, terminating in bloodshed and loss of life. The fact is that in the New World, as well as in the Old, "man never is but always to be blessed."

The American Congress appears to have at last taken in hand the question of the prevention of American steam-boiler explosions,—a class of accidents which have been attended with such grievous loss of life as to bring upon the Americans the reproach of being reckless in regard to what ought to be held sacred. Congress has at last been roused to take action in the matter, and an Act passed by it with reference to tests of iron and steel has come into operation this month. For the purpose of carrying out practical tests, machines of great power are being manufactured, by which the tensile strength of iron and steel used in steamboats may be ascertained. All steamboat inspectors will be able to have the use of these machines, as one is to be supplied to each inspector in each district. The manufacturer is obliged by the new act to send samples for testing to the general inspector, by whom the test will be superintended. The mark of the manufacturer will be recorded by the local inspector, and the test will show whether or not the mark of the manufacturer is correct. A report of all the tests will have to be made at the close of each year at an annual meeting of the Board of Inspectors of Steamboats. Under the new Act a manufacturer is allowed to mark his goods according to the test which he himself applies; but the exact strength of the iron and steel will be known after the Government test has been applied. And in reference to boiler iron, the tests are to be particularly observed before being applied for that purpose. All these arrangements seem worthy of commendation, and it is hoped that the American steam-boiler explosions of the future will be few and far between.

The third circumstance in connection with American affairs to which we desire to direct attention is the substantial amount which was, after all, paid away last year upon American railroad stocks. Thus, the American railroad dividends of 1874 amounted to the sum of \$67,042,942, as compared with \$67,120,709 distributed in 1873. The decline which occurred in 1874 will be seen to have been slight and immaterial, and some American railroad property has thus been proved to possess a certain stability.

We regret to learn that "The Mineral Statistics of the United Kingdom for 1874"—the publication of which was promised to be early this year, and of which considerable portion is now known in the printer's hands—has been delayed in consequence of the illness of Mr. Robert Hunt. While pursuing his enquiries in the West Riding of Yorkshire he suffered so severely from loss of strength that he was compelled to abandon his important work, and seek for its recovery on the sea shore of Devon.

**MINING IN HIGH TEMPERATURES.**—The connection has recently been made between Gould and Curry and Best and Belcher Mines on the 1700 ft. levels. The work has progressed very slowly, as the heat was so intense that it required three or four men to swing a pick, and even then they became exhausted in a few minutes. In that part of the mine the thermometer stood at 115°, and it was absolutely necessary that ventilation should be secured. As soon as the drift is fairly opened a good supply of fresh air will be obtained, and the men can work without inconvenience. Both the Gould and Curry and the Best and Belcher can now be thoroughly prospected. Cross-cuts will be run for the ore body, and it is expected that important developments will soon be made.

**SAFETY-LAMPS.**—The invention of Mr. A. B. Boulenot, sen., of Paris, consists in replacing the safety-lamps usually employed in mines containing fire-damp by lamps supplied with air from outside the mine. Fixed pipes are carried down the mine, and branches are led into all the workings. Through these compressed air is forced from surface by air-pumps, and the improved lamp is screwed to the air-pipe by stopcocks. The cylinder which encloses the flame is protected by a cage, and the products of combustion pass off through two pieces of wire-gauze. The match for lighting the lamp is inserted through a spring clip, ignited within the lamp, and cannot be withdrawn until extinguished.

**EXPORTS OF RAILWAY IRON.**—The exports of railway iron from the United Kingdom in June exhibited considerable depression, having amounted in that month to 58,088 tons, as compared with 92,74 tons in June, 1874, and 72,962 tons in June, 1873. The exports of railway material to the United States receded in June to the remarkably small total of 1846 tons, as compared with 12,524 tons in June, 1874, and 18,016 tons in June, 1873; but the shipments to the United States increased to 16,410 tons, against 8451 tons in June, 1874, and 9069 tons in June, 1873. In the six months ending June 30 this year we exported railway iron to the aggregate extent of 229,907 tons, as compared with 427,267 tons in the corresponding period of 1874, and 347,757 tons in the corresponding period of 1873. In these totals the United States figured for 15,734 tons, 64,969 tons, and 120,468 tons respectively; British America, for 52,790 tons, 23,710 tons, and 29,774 tons respectively; and Australia, for 42,015 tons, 38,088 tons, and 9293 tons respectively. Our railway iron exports have increased this year to Peru, Chili, British America, and Australia, but they have decreased in almost every other direction. The value of the railway iron exported from the United Kingdom in June was 595,738/-, as compared with 1,111,393/- in June, 1874, and

962,458l. in June, 1873; and in the six months ending June 30 this year 2,683,928l., as compared with 5,494,762l. in the corresponding period of 1874, and 4,586,877l. in the corresponding period of 1873.

#### THE MIDLAND INSTITUTE OF MINING ENGINEERS, AND COAL-CUTTING MACHINERY.

The members of the Midland Institute of Mining Engineers, at their annual meeting, held at Barnsley last week, made an additional grant of 25l. to the sum of 50l. voted to a committee appointed some time ago to examine and report upon the various mechanical arrangements now in use for under-cutting or otherwise assisting in the operations of getting coal. The question of coal-cutting by machinery has from time to time been alluded to in the proceedings of the institute, and a committee was appointed, with a view of inspecting and reporting upon the machines in use at the various collieries throughout the country. Since its appointment the committee have visited several collieries in Yorkshire, Lancashire, and elsewhere where machines are in use. A short time ago they visited the Wharncliffe Silkstone Colliery, near Barnsley, where a machine patented by Messrs. Gillott and Copley is in use, and where something like 1200 yards of face is laid out for working by machine. The committee have expended about 40l. of the 50l. granted, and the additional vote was made in order to enable them to complete their operations. The subject is of great importance, not only to coalowners but to the engineering world generally. It has been forced upon the attention of masters and patentees from time to time, but the results have not been so favourable as could have been wished. In 1867, the South Lancashire and Cheshire Coalowners' Association offered 800l., divided into three prizes, for the best machine, with the same object in view. Mr. W. Firth, of Leeds, offered 500l. in 1872. The question is evidently looked upon with great interest by those engaged in mining operations and the winning of coal. Messrs. Newton, Chambers, and Co., the owners of the Thorncleiffe and Chapelton Ironworks and Collieries, who are sinking to the silkstone seam at the Rockingham Colliery, near Barnsley, are understood to have decided to introduce coal-cutting machinery. The colliery is to be worked on the long wall system, and banks of from 200 to 300 yards in length will be driven, so that machinery will have the fullest opportunity of being worked to advantage. The report of the committee is looked forward to with some interest, as no pains or expense have been spared to arrive at a correct conclusion from an inspection of machines actually at work.

#### REPORT FROM CORNWALL.

*July 22.*—Everything considered, the present generation can hardly have known a more depressed period in tin mining than the present. A lower figure has certainly been touched than that which has ruled during the past few days, but then coals were cheaper, and mines were not quite so deep, so that, upon the whole, we may set one against the other. That there will be a recovery no one doubts; if it did not come there would, at last, be something new under the sun, but the chances are that we shall not have it until the number of our struggling tin mines has been seriously reduced. It is to be presumed that the "struggle for existence" will end in the "survival of the fittest," but still many a promising enterprise runs serious danger of being cut off. Such a time requires the exercise of the greatest discretion on the part of managers and adventurers.

How great the depression already is in some quarters is very evident. Responding to the toast "Success to Mining," the other day at Stithians, Mr. Mitchell, of St. Day, said Gwennap parish, with which he was identified, was under a tremendous cloud. He recollects a time when there were 30 steam-engines at work in the parish, and now there were only two. However, he was very hopeful that a brighter day was dawning. He believed in the theory that the valley alongside Carn Marth would, if ever it was opened up, be found as rich as that along Carn Brea, and unquestionably there is hope in the opening up of fresh ground.

There is a great deal of activity in the fire-brick and arsenic works near Calstock. The Phoenix Fire-Clay Brick Works are now sending off a cargo of fire-bricks and clay to Cronstadt. The bricks are much approved in Russia, and many cargoes of these have already been sent to that country. The West of England Fire-Brick Company are executing large orders for bricks for the dockyard for Cardiff, and other places. The East Cornwall Minerals Railway has lately been much engaged in the transport of coals to the interior, and bringing down to the quays bricks, clay, arsenic, and other things which are sent away in large quantities. Much of the arsenic is sent to Antwerp. The creditors of the West of England Company have, on the proposal of the directors, consented to the payment of their claims by equal instalments at the expiration of three, six, and nine months. Steps are being taken to increase the capital of the company, and it is stated the sum of 20,000l. has already been guaranteed.

Our friends of the Liskeard Union cannot settle their differences; they pulled the money out of the mines, and now they are quarrelling as to what shall be done with it. At the meeting of the Liskeard Board of Guardians, on Saturday, a discussion took place as to the appropriation by the parishes of St. Cleer, Menheniot, Linkinhorne, and Lanreath of the money paid to them for poor-rates by the various mines in those districts. Capt. Hawker, on behalf of the committee appointed to investigate the matter with a view to an amicable settlement as between all the parishes in the Union, stated that a committee could not agree, and it was at length decided by the guardians to ask the Local Government Board to send down a commissioner to investigate the whole proceedings.

Mr. Rule is not without honour. The new pumping-engine which has just been erected at West Seton, and which was started by Miss Thomas, daughter of Capt. Josiah Thomas, on Saturday last, is called Rule's engine, in honour of Mr. Rule, who has stuck to the mine through all its difficulties, and who is now the largest shareholder on the books. The mine has now excellent prospects. With this additional engine, which is a powerful one, with a cylinder of 70 in. diameter, the water will soon be out, and all the levels free to work. At present the mine is returning a lot of copper, and the prospects are that Capt. Josiah Thomas will have the honour of taking the chair at the next copper ticketing. West Seton has paid 233,400/- in dividends, and 40,000/- in dues, and the pay at the present moment amounts to about 900/- a month. There is at present a large quantity of stuff drawn from places which were not worked at all when the mine was in fork, and the sampling for the last two months will be about 250 tons, and it is believed the mine will soon be in a position to pay costs. Some of the men have been earning very high wages, owing to the improvements which have taken place. The copper ore averages about 7/- per ton, and a large quantity of arsenic is returned on the mine. It is said that the late Mr. Harvey, who made 4000/- in the mine, missed another 40,000/- by going out of the mine at the time he did. The mine is looking well at the 120, and there is a large quantity of water coming out from an end which was previously dry.

There has been from first to last a good deal of chaff current against the Corporation of Truro on account of the shaft they sunk by way of public well, to supply the town with water, heedless of the warnings of pretty nigh all the scientific and practical men of the county. Since the shaft is a failure as a well, somebody has suggested that it should be worked as a mine. "It is not at all improbable," says he, "that if the drift in a westerly direction had been prosecuted much further a lead lode would have been intersected, as lead lodes abound in and about Truro, if my information is correct. This mine, like many other metallic mines in Cornwall, has been abandoned without a sufficient trial for metal. I hope that in their next mining speculation the adventurers will be more successful." The suggestion is not a bad one; at any rate, there is more chance of lead than water.

The agriculture of Cornwall owes a great debt to the working miners of the county, who in their spare hours have reclaimed many thousands of acres of waste lands. One instance to which attention has recently been directed is at Connor Downs, in Gwithian parish, where nearly 200 acres have been thus bought in—under leases of lives chiefly—at the rent of 2s. 6d. per acre. The farms

now average from three to ten acres each, and each holding has a dwelling-house upon it, with the necessary outbuildings. These houses have been built by the miners themselves, sometimes with their own hands. The little farms now yield excellent crops of almost any kind, but the chief grain produce is wheat. Nearly every miner has his cow and pig, and a few have a pony and cart. Some of the farms yield potatoes enough to last the household from year's end to year's end. In these houses, on those farms, large households have been reared, and sons and daughters have been taught the habits of sobriety, frugality, and industry. The men still work in the mines, and many of their sons and daughters also, and attend to their farms when they have leisure, so that they are comfortable. The reclaimed land is now worth 17. 10s. an acre instead of 2s. 6d., an increase in value of 800 per cent.

For more than 100 years, ever since 1708, there has been a Cornish Club in London. It has been, however, a mere dining club, and it is now intended to start another on a wider basis. It will be called the Cornish Association, and consist of gentlemen residing in or frequently visiting London, who are so far interested by birth, descent, property, or otherwise in the county of Cornwall, as to be willing to promote the objects proposed by the Association. It is thought that meetings may be held monthly from November to June inclusive, at which papers might be read connected with the county, to be followed by a discussion or a more informal conversation between those present. The Association, besides being a centre of union among the very large number of Cornishmen in London, would probably include some charitable object within its scope. The idea of the Association originated with Mr. Henwood Thomas, editor of the *Civil Service Review*, and it was once heartily adopted by the Hon. Mr. Robertes, son of the former M.P. for the Eastern Division of the county, and by Mr. Leonard Courtney, of the *Times*. Two of the Cornish M.P.'s—Mr. Pendarves Vivian and Sir Colman Rashleigh—are warmly supporting the proposal. The provisional committee includes among others Mr. Robertes, Mr. Pendarves Vivian, M.P., Mr. Claude Vivian (son of the Lord Lieutenant), Mr. Leonard Courtney, Mr. Wm. P. Courtney (one of the joint authors of *Bibliotheca Cornubiensis*), and Mr. Henwood Thomas, who is the hon. secretary. The promoters are working with such hearty good will and thorough Cornish unanimity that the project is certain to succeed.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

*July 22.*—South Staffordshire ironmasters are still unable to report much improvement either in the pig or the finished departments of the trade, although in few instances now are orders being withheld by merchants in the hope of a reduction in prices, so impracticable has such a course become under the existing conditions of manufacture. The leading firms now uniformly quote finished marked iron on the standard of 10/- per hars, with the usual extra 12s. 6d. for the brands of Earl Dudley, Messrs. Barrows, and one or two other exceptionally favoured houses. Common (unmarked) bars are selling at 8s. 2s. 6d. to 8s. 5s. per ton, sheets (singles) at 11s., and hoops at 9s. 10s. per ton. The demand for sheets is better than for any other class of finished iron, but it is less buoyant than we were able to report a few weeks ago. The pig-iron market is quiet, but steady, the selling rate ranging from 2s. 17s. 6d. for common cinder to 4/- for best native all-mine, with the usual proportionate prices for intermediate qualities. Foundry pigs of noted makes are in steady demand, at Quarter-day prices. Iron castings of the heavier class have been declared 1/- per ton lower, consequent on the late reduction in the price of pigs. The number of blast-furnaces now in operation in South Staffordshire is 80, being 30 less than the total blowing five years ago, and little more than one-half of the aggregate number built.

Industrial operations in the Black Country have been somewhat interrupted during the past week by the heavy rains and floods. The canals have burst, and the lines of railway have been inundated in several places, intercepting the traffic; and many of the collieries and ironworks have been so flooded as to necessitate a stoppage of operations.

The South Staffordshire Coal Trade is without much feature since our last report. The demand continues flat, but prices of the better descriptions are fairly well supported. Thick coal west of Dudley is quoted—best, 16s.; seconds, 11s.; lumps, 10s.; steam coal, 9s. 6d.; and slack, 3s. 6d. per ton. As compared with the rates ruling 15 months ago, these rates show a reduction of 7s. 6d. per ton on coal and lumps, and 6s. 6d. per ton on engine slack. For common thin coal on the Wolverhampton side of the district the selling rates are low, and show a good deal of irregularity. The miners have accepted without hesitation the notice recently given by the masters for a reduction in the rate of wages.

To-day's quotations on the Birmingham Stock Exchange included the following:—Cannock and Huntington Colliery, 1½ prem.; Chilington Iron, 5½; Patent Shaft and Axle, 3½ prem.; Pelsall Coal and Iron, 5 dis.; Sandwell Park Colliery, 29; Staffordshire Wheel and Axle, 2½ prem.; Ivy House Colliery, 1 dis.; John Bagnall and Sons (Limited), 5½; and Gloucester Wagon, 16½, sellers.

The Great Wyreley Colliery Company, which has for some time been successfully carried on by Mr. T. Bantock (Wolverhampton), Mr. B. Gilpin (Cannock), and one or two other local capitalists, has just been merged into a private joint-stock concern, with an authorised capital of 160,000/-, in 100/- shares.

The North Stafford Iron Trade has undergone a slight improvement during the last few days, but its condition is still far from satisfactory, the operations of the mills and forges being very irregular. Bridge and girder plates command rather more enquiry, but the boiler plate trade is rather flat. The coal market is dull and unsettled, the selling rates for manufacturing coal averaging 13s. per ton.

Messrs. Claridge, North, and Co., Bilton, write: In one of your recent publications you speak of a large turn-out of rails by a mill patented by Mr. Wm. Brown, of Bilton. The quantity of rails you mention as being turned out is not overrated, inasmuch as this mill often turns out 135 tons of 45-lb. rails per ton, or at the rate of 2700 tons per fortnight. The principal object, however, in writing you this is to say that we think it would only have been fair to have stated that the details of the mill were designed, carried out, and made by us, and that it is the first mill put to work upon this plan. We may add that all who have seen it pronounce it to be the very best mill extant for rolling rails.

**PROGRESS OF THE MINES DRAINAGE OPERATIONS IN SOUTH STAFFORDSHIRE.**—We are gratified to be able to report favourably of the continued progress of those operations in South Staffordshire which contemplate the recovery of many thousands of tons of very precious mineral, both as fuel and as ironstone. As many as 1000 workpeople are now busy with spade and axe, and beetle and trowel, cleansing out, deepening, and puddling old water-ways, making new ones, raising embankments, and building culverts—all necessary to the carrying out of the plans of the South Staffordshire Mines Drainage Commissioners for drainage of the surface of that colliery district. These works have all been ordered by the arbitrators to the Commissioners, and they are being conducted under the superintendence of the Commissioners' chief engineer (Mr. E. B. Marten, C.E.), mostly by contractors, but some by the Commissioners' workmen. Everything is thoroughly done, and yet the headway which is being made is conspicuous. The Commissioners experience much satisfaction from the fact that the work already effected has stood without any conspicuous flinching the recent heavy and continuous rains—indeed, but for what the Commissioners have already done that down-pour of water would certainly have proved not simply troublesome, but irksome, if not dangerous to several localities in the South Staffordshire coal field. When the plans for the surface drainage of the whole district have been completed colliery owners in that central field may be able to lie in bed very comfortably, however stormy may be the night, or however rapid may be the torrents which sweep along the new channels. There is a feature about the work which three weeks ago elicited observations from members of the South Staffordshire coal trade and from other traders in the district, which had the semblance of complaint that rather more money was being expended than would seem to be warranted by the requirements of the localities. This arises mainly out of what seems to be the magnitude of the operations, as seen in the deepened water courses and the high embankments along their margin. What, however, these people cannot understand such engineers as Messrs. Woodhouse and Hawksley know to be requisite, and the floods of the past fortnight have greatly modified objectors' views. Streams have been deepened to make the flow less rapid, and high embankments have been necessary to prevent the overflow of the greater body of water which, under these arrangements, will find its way into the channels during the rainy seasons. Happily, the cost is within the importance of the work. The paddling of a stream we all know to be a costly operation, but it needs not that the whole sides of a stream, as well as the bed of it, should be puddled. It is enough that that portion of the channel which is usually under water should be thus protected. Nor is the width of the channel the same at its floor as at its embankment. The cost of the portions of the work which are most seen by people merely passing through South Staffordshire is much less than that which is out of sight. Throwing up a good embankment is not an expensive operation. The Commissioners do well, we think, to leave themselves in the hands of such men as those whose names as engineers we have already mentioned, and by-and-by the colliery owners and ironmasters of the district will have reason to conclude that the Commissioners did wisely when they determined to carry out the plans of Messrs. Woodhouse and Hawksley. Money is being raised by virtue of the awards of the arbitrators for

surface drainage purposes, and this is the money which is being expended in the works we are describing. Even as some persons were once disposed to a little complain that the works which they notice are more extensive than are required by the circumstances of the district, so there are now contributing to the expense of the work mineowners who are not disinclined to think that the money which has been raised from the several localities is being disproportionately expended. Here, again, the surmises are not well founded, they proceed upon imperfect information. Colliery owners, whose property is situated high up a stream, perceive that more is being done lower down than in their own immediate localities; but they do not sufficiently remember that it is in some part because the surface water from their own property is drained into the stream nearer to its source that extensive operations are needed lower down the stream. To these objects the Commissioners might fairly reply—"If you would keep your colliery water out of the stream we should not have to spend so much money where we are spending it." Without doubt, much effort is being put forth upon the Bilston and Tipton localities; but it is all essential if every colliery upon the whole line of the Stour is to be effectively drained. The engineers have the advantage of looking at the whole district at once; individual colliery owners may be excused for looking at only detached portions. The heaviest portion of the work is being done in that part of South Staffordshire which runs from Wednesbury to Dudley Port and Sheepwash. The Commissioners have purchased the Wednesbury Mill; and the levelling operations, and the making secure of the property upon the course of the old mill stream is a somewhat expensive affair. But when the work hereabouts is done then lower down the stream it will cost no more to do 10 miles than it is costing in the district we specify to accomplish  $\frac{1}{4}$  mile of work. The more closely and the more comprehensively the operations of the engineers are watched the more real cause is there for satisfaction at what is being effected. During the hot weather of May there was a ery in South Staffordshire that the cleansing of the old streams and the draining of the swamps would occasion malaria; but the event, happily, has removed all anxiety. In no case has the annoyance been of more than two or three days' duration. Coal and ironstone proprietors, ironmasters, and, in short, all classes of people in South Staffordshire, have cause for much satisfaction at what is being done. Within another month the difficult work we have described as in progress in the Wednesbury and the Dudley Port localities will have been got over, and the people will then be astonished at the early day upon which there will be public announcement that the surface operations of the Mines Drainage Commissioners of South Staffordshire are completed. A pecuniary return for the rates which are now being paid by the mineowners may not be as prompt as all taxpayers could desire; but some benefit is being experienced upon most hands already, and the permanent advantage will be great.

#### TRADE OF THE TYNE AND WEAR.

*July 22.*—The Coal and Coke Trades continue in a dull, lifeless state, without any sign of improvement at present. The supplies of all kinds of coal are plentiful, and the tendency is still towards lower prices. Many of the works are laid off occasionally from one to three days per week. Coke is more plentiful, and the prices rather declining. At most of the works there is a difficulty in keeping them going regularly, and the competition for sales also tends constantly to reduce the prices, so that at present the prospect is gloomy enough. The list of new works lately opened and in progress in a most formidable one, and unless some improvement takes place in the condition of the iron trade the prospect for the coal trade is certainly not encouraging.

The new winning for coal at Whitburn has made good progress of late; two shafts, each 15 ft. in diameter, have been sunk down into the limestone, where considerable feeders of water are met with. A large engine is expected to be started during the present week to pump the water; this engine is similar to the large winding-engine working at the Silksworth Colliery. It will be employed first in clearing the shafts of water, and, when the water is successfully tubbed back, will afterwards be used for the purpose of winding coals from one of the shafts. The plans for this colliery when fully carried out will result in the formation of a coal mine on a scale never yet attempted. The two shafts now sunk into the limestone will be used for working the coal under the land, of which there is a large area leased. Two more shafts will be sunk at a short distance, and these shafts are intended to work the coal underneath the sea, and the workings from the latter shafts will be kept quite separate, as it is certainly very desirable, if not absolutely necessary, to keep workings underneath the sea separate from extensive workings under the land, as there will always be a possibility of large feeders of water being met with in workings carried on under the sea. As all these shafts will be used for drawing coals, and the engines will be capable of raising at least 1000 tons per day, these four shafts will be capable of raising about 1,000,000 tons of coal per annum.

The Iron Trade in all branches continues very dull and flat. At Middlesborough, on Tuesday, there was a good attendance, but little business done. Pig-iron is still falling in price; No. 1 is now 50s. per ton, No. 3 49s. The wages question is scarcely settled, although the majority of the men have accepted the offer of the masters to give 9s. per ton for the next six months; but the men have struck at some of the works. Shipments, coastwise and foreign, are on a limited scale, and orders are scarce in all branches. The rail trade is extremely dull at present, the plate trade is comparatively better. The prices of plate are 8s. 10s., and some ask a little more. Bars, common qualities, 8s.; puddled bars, 5s. to 5s. 2s. 6d.; ordinary rails, 7s. The coke trade is dull, and prices lower; best 14s. to 16s. Coal is in small request, prices unaltered.

**NEW Winnings FOR COAL IN THE NORTH, AND THE POSITION OF THE TRADE.**—It must be noted that many fixed and permanent charges have been added to the production of coal during the past four years. The Mines Regulation Act has added not less than 15 per cent., and the present wages of the hands, after recent reductions have been made, remain 34 per cent. above the prices of 1871. How long this level of wages can be maintained remains to be proved, but the opinion is pretty general that a further reduction must be made shortly if the works are to be carried on, or a majority of them. A large number of new collieries have been opened out in this district since 1871, and many others are in course of development. We have already glanced at the extensive new works in progress at Whitburn. We have no authentic account of the number of new collieries opened here of late, but there is no doubt that they will amount to at least 60 outcrops. It must not, however, be supposed that the quantity put out at each new colliery is an addition to the total output of the district. Previous to the late coal famine a very small number of new openings for coal were made for many years, and many old collieries have been exhausted and worked out of late. It must also be borne in mind that the total output of the district can only be in proportion to the number of coal-hewers employed, and their number cannot be increased indefinitely, or even rapidly. Coal-hewers and all others employed in mines will also cling most tenaciously to short time in working and high rates of pay, so that the increase of output will certainly not be so rapid as appears to be anticipated by some writers. It is quite common to put down the probable yield of a colliery at (say) 1000 tons per day, when the average quantity does not exceed 700 tons per day. It is also quite clear that, so long as coal is got exclusively by hand labour, the cost must continue to be high—perhaps too high for the times now lying before us—and also the quantity must be limited; yet for all practical purposes coal is got entirely by hand labour in this district, as there are not more than four coal-cutting machines at work at present in Durham, and none in Northumberland; while it is quite clear that those machines are making good progress in the midland districts. This can only be accounted for by supposing that the long wall system of working is more favourable for those machines than the system of pillar and stall working, and the latter system is nearly universally followed in the North, while the long wall system has been in use for ages in the midland and southern districts.

A good deal of importance necessarily attaches to the investigation of the problem of how far the present position of the iron trade is better or worse than at any previous crisis in its history. Facts and figures justify the conclusion that the maker of pig-iron never found greater difficulty in making both ends meet. The pig-iron trade of Cleveland originated about 1851, and from that date till 1855 prices were invariably over 50s. per ton, although the industrial depression in the midst of which the Cleveland iron trade was born may be judged by the price at which pig-iron was quoted in Glasgow—the average price per ton in 1851 being only 40s. 1d. From this date, however, prices gradually rose, until in 1855 we find Scotch pig-iron quoted at 70s. 9d. per ton, while the average price of Cleveland pig-iron for the same year (No. 3) was 70s. 4d. per ton. In 1856, Cleveland No. 3 fell to 68s. 4d., while the average price of Scotch pig-iron for the same year was 72s. 4d. per ton. From this point prices began to fall, until in 1859 Scotch pig-iron was quoted at 51s. 10d. per ton, and Cleveland No. 3 realised an average of

JULY 24, 1875.

ever been before, except in the years 1851-52. The minimum price of this period, however, was not under 37s. to 40s. per ton, about which figure pig-iron remained, until in 1865 it gradually rose to 43s. per ton in September, and closed the year at 45s. The average price of No. 3 in 1869 was about 45s. per ton, 41s. being touched in September, and 45s. 6d. being recovered in November; while at the end of December 49s. had been attained. A steady business was done during 1870, the highest figure touched being 54s. 6d. in July, and the lowest being 47s. 6d. in November. Prices gradually rose from this date, all through 1871 and the early part of 1872, until in August of the latter year No. 3 was quoted for immediate delivery at 117s. per ton. The top price was reached in February, 1873, when 125s. was paid for No. 3, although in November of the same year the same quality of iron was sold at 82s. 6d. per ton, and from that date the range of prices has slowly declined until any quantity of iron may now be bought at 50s. per ton. It is no secret, however, that less profit can be realised on pig-iron at 50s. per ton in 1874, than that realisable on 40s. per ton during the ten years ending with 1870. Up to the latter year coke was seldom sold at more than 10s. per ton. In 1860, coke was only 7s. 4d. per ton; in 1865 it was 8s. 8d.; and this figure was pretty evenly maintained until 1870, when it rose to 10s. 6d. per ton. Up to the end of 1871 coke remained at 10s. to 10s. 6d. per ton; before the end of 1872 it had risen to 20s. per ton; and in 1873 it rose to 45s. per ton. The present price of coke is about 15s. 6d. to 16s. per ton, or just double the price of the five years ending with 1865. Other materials have advanced in a similar proportion. Ironstone now costs more than it did at any time previous to 1871, and labour is also much more expensive. It is clear, therefore, that if the price of pig-iron is to be reduced to the level of the ten years ending with 1870—and it is already very close upon the average of that period—there ought to be a corresponding fall in the value of raw materials, in order to afford to the trade the relief which it requires.—Correspondent of the Newcastle Daily Chronicle.

## REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

*July 22.*—The serious casualties which have occurred during the past week in this district have turned attention from matters of trade to some extent. Considerable damage to property and loss of life have been caused by the heavy floods rushing down the valleys, and operations at the works and the traffic on the various railways have been materially interfered with. In the Risca Valley, Monmouthshire, the bursting of a large reservoir feeding the canal caused great destruction, and 12 persons were drowned. These matters have, of course, absorbed conversation for the time being, and complaining against the dulness of trade has been abandoned. Unfortunately, however, the causes for complaint have not been removed. There is no appreciable change in the state of the staple trades. In regard to iron especially there is no improvement to note. If buyers have any orders to give out, they evince considerable indifference to place them. But the fact is there are not many contracts at anyone's disposal, and the low prices quoted are little inducement to buyers, and at present rates a number of orders would not be of much advantage to makers, as according to their own statements the few orders they now secure are executed at actual losses. Still it cannot be denied that the cost of fuel and raw material generally has fallen very considerably, and is still tending downwards. The little iron that is being manufactured is principally on account of continental markets. There is yet no change to note in regard to Russia or the colonies. Very great depression has fallen on the steel trade, and as one of the consequences the Ebbw Vale Steel, Iron, and Coal Company have been compelled to stop their works at Ebbw Vale, thus throwing nearly a thousand hands out of employment. Things have not, perhaps, been so dull in this branch of manufacture since it commenced. Although there is an appearance of animation at the tin-plate works, this trade has also its share of difficulties. The demand continues to decline, and the makers are greatly reducing the manufacture. Prices are also falling.

Though a large business is being done in coals, complaints are made of a want of orders. This arises from the very large increase in the output of coal, and not because the demand is inactive. All the pits and men are again at work; and with the anxiety shown by masters and men to recoup themselves for the late stoppages, there is little wonder that the market is over supplied. There is a good European demand kept up, and some important contracts are being given out by the Admiralty.

At the time when so many colliery and other companies are compelled to present unfavourable balance-sheets, there is some satisfaction in finding that there are some exceptions to the rule. The dividend declared by Richards and Co. (Limited) for the last half-year is at the rate of 10 per cent. per annum, and the company's works and general business are reported to be in a profitable condition.

The directors of the West Mostyn Coal and Iron Company (Limited) have declared a dividend at the rate of 12 per cent. per annum on the preference shares for the past half year.

The newly-constructed washing machine, which has been in construction for the last six months at a point on the north end of the forge on the Ebbw Vale Company's line, which connects Ebbw Vale, Victoria, and Silynowy, began work on Saturday, and the trial appeared to give satisfaction. The object sought to be secured in the erection of this additional machine is to cleanse the small coal by separating the rubbish from it, that it may be used with greater advantage for forge and other purposes at home, and thereby enable the company to send more big coal to market than it would otherwise be enabled to do.

During the past fortnight a large quantity of Welsh coal has been received at Keyham, and piled in long walls around a large portion of the yard. This week several thousand tons of Heath's (Cardiff) patent coal will be unshipped and stored. This coal is prepared by a combination of small dust coal baked in tar and naphtha, and made into blocks about 1 foot square, and is found to be exceedingly valuable in the larger class of steamships, as much greater quantity can be stowed away than the ordinary coal. The Admiralty has recently accepted a contract of 800,000 tons of coal.

At the examination of the south-west district, held at the Westgate Hotel, Newport, to compete for certificates of competency as colliery managers, Mr. John P. Williams passed in a very honourable manner. About fifteen candidates sat, and Mr. Williams came out amongst the five who satisfied the examiners. Mr. Williams is a native of this place, and is a bona fide working man. It is said that the examination was of a severe character.

## THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week the market has been quiet, with a small business passing. In shares of iron and coal concerns the dealings have been unimportant. The following, however, have each improved to the extent noted:—Banhar (all paid),  $\frac{1}{2}$ ; ditto (5/- paid),  $\frac{1}{2}$ ; Ebbw Vale,  $\frac{1}{2}$ ; Monkland ordinary, 6d.; and ditto 7 per cent. guaranteed preference,  $\frac{1}{2}$ . Britannia Ironworks are 10 to 20. Chillington has declined  $\frac{1}{2}$ ; Glasgow Port Washington (8/- paid), also  $\frac{1}{2}$ ; Marbella, 6d.; and Scottish Australian,  $\frac{1}{2}$ . South Cleveland Ironworks are about 3 to  $\frac{1}{2}$ . United Bituminous Collieries dull, at  $\frac{1}{2}$  to  $\frac{1}{2}$ ; the present price of coal deters this company from raising it to any extent; brickmaking, however, is being carried on at both collieries. In shares of copper concerns, Huntington is 1s.; Rio Tinto,  $\frac{1}{2}$ ; and Tharsis (all paid),  $\frac{1}{2}$ —all lower per share; the new (7/- paid) Tharsis shares are, however, unaltered. Yorke Peninsula ordinary have improved  $\frac{1}{2}$ . Gunnislake (Clitters) steady, at  $\frac{1}{2}$  to  $\frac{1}{2}$ . Marke Valley easier, at  $\frac{1}{2}$  to 2; it is believed these shares will go higher. Dunsley Wheal Phoenix remain at 2s. to 4s.; and West Maria and Fortescue at 4s. to 8s. Almada and Trito has declined, at 11-16ths to 13-16ths. In gold and silver mine shares, Flagstaff shares dull. Colorado Terrible and Richmond have each improved 1, and have every appearance of going better, especially the first-named. Javali is lower, at  $\frac{1}{2}$  to  $\frac{1}{2}$ , on the return for May not proving good. In shares of oil companies little doing. Young's Paraffin are, however, easier, at 5 to  $\frac{1}{2}$ . Some Uphill shares have been offered. In miscellaneous, Scottish Wagon shares (all paid) again mark an advance, at 12s.; the new (4/- paid) being unaltered, at 9s. Native guano shares have fallen 1. A detailed list of the several days' business follows:—

On THURSDAY last a small business was done. Almada and Trito,  $\frac{1}{2}$  to  $\frac{1}{2}$ . Arniston done at 6s. Benhar (all paid) better, at 10s. to 10s. 6d. new (5/- paid) shares also higher at 5s. to 5s. Ebbw Vale done at 17s., closing 17 to 17s. 6d. Emma done at 38s., closing 38s. to 37s. Glasgow Port Washington lower at 26s. to 28s. Gunnislake (Clitters), 1s. to 1s. 6d. Huntington remain at 48s.; the trading accounts of the mine and extracting works in full detail for the year ending April 31 last have been issued for the adjourned meeting to be held on 31st inst. Marbella done at 38s. 6d., closing 38s. to 38s. Marke Valley, 1s. to 2s. Monkland (ordinary) done at 5s., closing 5s. to 5s. 6d. Richmond Consols higher at 1s. to 1s. 6d. Rio Tinto, 8 to 7. South Cleveland Ironworks, 3 to 4. Tharsis done at 24 s. 16ths, closing 23s. to 24s. Scottish Wagons (all paid), done at 12s.

On FRIDAY a small business was done. Almada and Trito,  $\frac{1}{2}$  to  $\frac{1}{2}$ . Benhar (all paid) done at 10s. Ebbw Vale done at 17. Emma better, done at 39s., closing 38s. 6d. to 39s. 6d. Glasgow Port Washington done at 28s., closing 24s. to 28s. Gunnislake (Clitters), 1s. to 1s. 6d. Huntington remain at 48s.; the trading accounts of the mine and extracting works in full detail for the year ending April 31 last have been issued for the adjourned meeting to be held on 31st inst. Marbella done at 38s. 6d., closing 38s. to 38s. Marke Valley, 1s. to 2s. Monkland (ordinary) done at 5s., closing 5s. to 5s. 6d. Richmond Consols higher at 1s. to 1s. 6d. Rio Tinto, 8 to 7. South Cleveland Ironworks, 3 to 4. Tharsis done at 24 s. 16ths, closing 23s. to 24s. Scottish Wagons (all paid), done at 12s.

On SATURDAY, owing to the principal Stock Exchanges being closed, the business done was very small. Almada and Trito,  $\frac{1}{2}$  to  $\frac{1}{2}$ . Britannia Ironworks, 10 to 20. Chillington,  $\frac{1}{2}$  to  $\frac{1}{2}$ . Colorado Terrible very firm at 2s. to 3s.; there being very few shares on the market. Emma done at 38s. 6d., closing 38s. to 38s. 6d. Marke Valley remains at 1s. to 1s. 6d. Glasgow Caradon (original), 26s. 6d.; the next sale of ore is computed 240 tons, and will take place on the 29th inst. Last month's sale was 250 tons, and the sale at this time last year 240 tons. Marke Valley still scarce at 1s. to 1s. 6d. Richmond Consols again better at 14 to 14s. United Bituminous Collieries, 4s. 6d. to 5s. 6d.

On MONDAY the business still remained limited. Almada and Trito,  $\frac{1}{2}$  to  $\frac{1}{2}$ . Chillington Iron shares lower, at 5s. to 5s. Colorado Terrible shares remain firm, at 2s. to 3s. Flagstaff shares lower, at 1s. to 1s. 6d. Javali shares easier, at  $\frac{1}{2}$  to  $\frac{1}{2}$ ; the report, dated June 5 last, from the mine, shows a balance of loss on the month's working of over 150t. It is estimated that there are 3000 tons of quartz on hand ready for crushing as soon as the dry season ends, which is at present restricting operations. Marke Valley, 1s. to 2s.; Pannicello, 1 to 1s. 6d. Rio Tinto shares better, at 6s. to 7s. Richmond Consols about 14. South Cleveland Iron, 3 to 4; Tharsis, 2s. to 2s. 6d. Scottish Wagon (all paid) done at 12s.; and new shares (4/- paid), at 9s.

On TUESDAY the business done was again limited. Almada and Trito,  $\frac{1}{2}$  to  $\frac{1}{2}$ . Benhar (all paid), 10s. to 10s. 6d. new (5/- paid) shares asked for, at 10s. 6d. Colorado Terrible firm, at 2s. to 3s. Emma, 38s. 6d. to 40s. Flagstaff lower, at 1s. to 1s. 6d. Javali, 7s. to 9s. Marbella done at 38s., closing

8s. to 8s. Monkland ordinary done at 5s., closing 5s. to 5s. 6d.; 7 per cent. guaranteed preference done at 6s., being  $\frac{1}{2}$  higher. Richmond shares done at 13s. to 13s. 6d., closing weaker, at 13 to 13s., being a fall of 1 on the day; the week's run, as announced from the mine by telegraph, is \$15,000, being the same as last. Tharsis shares idle, at 28 15-16ths to 24. Young's Paraffin shares changed hands at 5s., closing lower, at 5 to 5s. Yorke Peninsula (ordinary) better, at 1s. to 1s. 6d. United Bituminous shares lower, at 5s. to 5s. Scottish Wagon (all paid) done at 12s.; and new (4/- paid) shares at 9s.

On WEDNESDAY a larger business was done. Almada and Trito lower, at 5s. to 5s. Benhar (all paid) wanted, at 10s. New (5/- paid) shares done at 5s., closing 5s. to 5s. Colorado Terrible remain scarce, and are now quoted rather higher, at 2s. to 3s. Emma shares done at 38s., 6d. to 38s. 6d. Flagstaff, 1s. to 1s. 6d. Glasgow Port Washington (5/- paid) done at 25s. Huntington lower, done at 42s., closing 41s. 6d. to 42s. 6d. Javali, 3s. to 3s. Marbella, 3s. to 3s. Monkland ordinary done at 5s., and 5s. 6d. Marke Valley lower, at 5s. to 5s. Richmond shares better, at 13s. to 13s. 6d. South Cleveland Ironworks nominal, at 3 to 4. Tharsis lower, done at 23s. to 23s. 6d., closing 23s. to 23s. 6d. Yorke Peninsula ordinary, firm at 1s. to 1s. 6d. United Bituminous Collieries remain dull, at 5s. to 5s.

The following are this week's prices of some stocks, shares, &c., occasionally dealt in on this market, but not quoted (with few exceptions) on any of the Scotch Stock Exchanges:—Iron, Steel, and Coal Companies: Andrew Knowles and Sons, 23s.; Britannia Ironworks, 10; Cardiff and Swansea Steam Coal, 3s.; Chapel House Colliery, 3s. to 4s.; Great Western Colliery, 9; Lehigh and Wilkes Barre 6 per cent. first mortgage, guaranteed by Central Railroad of New Jersey (U.S.), 89s.; Llynni, Tondu, and Ogmore Coal and Iron, 2s.; Mwyndy Iron Ore, 2s.; Newport Abercarn Colliery, 3s.; New Sharston Collieries, preferred, 5s.; Powell's Llanllant Colliery, 2 to 3; Scottish Australian Mining, new shares, 5s.; South Cleveland Ironworks, 3s.; Ulverston Mining, 10s.; West Cumberland Iron and Steel, 9s.; Copper, Lead, Tin, &c., Companies: Almada and Trito, 13-16ths; Bensberg Lead, 3s.; Bowden Hill manganese, 5s.; Copiapo Mining, 3s.; Court Grange Lead, 3s.; Drake Walls, 6; Great Laxey, 14s.; Gunnislake (Clitters) 1s. 6s.; Lady Constance Lead, 1; New Consols, 2s.; New Quebec, 2s.; Pentre United, 1s. 6s.; Port Phillip and Colonial, 13-16ths; Rio Quebrada, 3s.; North Hendre Lead, 3 to 4; Plymlimon Lead, 7-16ths; South Roskar, 6s.; West Esgrai Lle, 1; West Maria and Fortescue, 5s.; Wheal Mary Hutchings, 5s.; Yorke Peninsula Mining 15 per cent. guaranteed preference, 5s.; Yorkshire Mining, 3-16ths to 3s.; Gold and Silver Companies: Australasian Mines Investment, 5s.; Battle Mountain, 2s.; Chontales Consolidated, 5s.; ditto new shares, 5s.; Colorado Terrible Lode, 3s.; Don Pedro North del Rey, 5s.; Eberhardt and Aurora, 8s.; Exchequer, 3s.; Frontino and Bolivia, 5s.; Javali, 3s. to 3s.; Pestarena United, 5s.; Port Phillip and Colonial, 13-16ths; Rio Quebrada, 3s.; Santa Barbara (late Paris), 5s.; St. John del Rey, 40s.; South Aurora, 7-16ths; Tecomar, 7s.; United Mexican, 3s.; Welsh, "The" Gold, 5s.; Winter's Freehold, 2 to 5; Oil Companies: Flintlock Oil and Cannel, 1 to 2; Midlothian, 5s.; West Calder, 1s.; Miscellaneous Companies: Aberdeen Lime, 15s.; Bede Metal and Chemical, 3s.; Conglog slate and Slab, 10s.; General Sewage and Manure, 9; Langdale's Chemical Manure, 5s.; Lawe's Chemical, 6; Native Guano, 5s.; Newcastle Chemical, 1s.; North Cornwall Kaolin, 1; Phospho-Guano A, 7; ditto B, 2; Thame Chemical, 5s.; and subjoined are the latest prices, &c., of those quoted on the Stock Exchanges:—

Amount share, paid-up.	Amount Name.	Latest price.
£10 ... 6 ... Arniston Coal (Limited)	6s.	
10 ... 10 ... Benhar Coal (Limited)	10s.	
5 ... Ditto	5s.	
100 ... 35 ... Bolekow, Vaughan, and Co. (Limited)	A. 50s.	
10 ... 9 ... Cairnstable Gas Coal (Limited)	8s. 9-18	
10 ... 10 ... Chillington Iron (Limited)	5s.	
32 ... 29 ... Ebbw Vale Steel, Iron, and Coal (Limited)	17s.	
10 ... 8 ... Fife Coal (Limited)	4	
10 ... 10 ... Glasgow Port Washington Iron and Coal (Limited)	1s. 6s.	
10 ... 10 ... Ditto All paid	3s.	
10 ... 10 ... Lochore and Capledale (Limited)	5s.	
10 ... 10 ... Marbella Iron Ore (Limited)	56s.	
10 ... 10 ... Monkland Iron and Coal (Limited)	5s.	
10 ... 10 ... Ditto 7 per cent. Guaranteed Preference.	6s.	
100 ... 100 ... Nant-y-Glo and Blaina Ironworks pref. (Limited)	44s.	
10 ... 4 ... Omoa and Cleland Iron and Coal (Limited)	2s.	
1 ... 1 ... Scottish Australian Mining (Limited)	1s.	
50 ... 50 ... Shotts Iron	7s.	
10 ... 6 ... Ditto New, issued at 2s. premium	7s.	
	COPPER, LEAD, SULPHUR, TIN.	
10 ... 7 ... Canadian Copper Pyrite (Limited)	2	
10 ... 10 ... Ditto All paid	6s.	
10 ... 7 ... Cape Copper (Limited)	34	
2 ... 2 ... Dunsley Wheal Phoenix Tin (Limited)	2s.	
1 ... 1 ... Glasgow Caradon Copper Mining (Limited)	26s. 6d.	
15s. ... Ditto New	19s.	
10 ... 9 ... Huntington Copper and Sulphur (Limited)	42s.	
25s. ... 28s. ... Kapunda Mining (Limited)	1s.	
4 ... 4 ... Panucillo Copper Mining (Limited)	1s. 6s.	
10 ... 10 ... Rio Tinto (Limited)	7	
10 ... 10 ... Russian Copper Mining (Limited)	2s.	
10 ... 10 ... Tharsis Copper and Sulphur (Limited)	23s.	
10 ... 7 ... Ditto New	16	
1 ... 1 ... Yorke Peninsula Mining (Limited)	7-16	
	GOLD, SILVER.	
20 ... 20 ... Dalmeny Oil (Limited)	36s.	
10 ... 10 ... Uphill Mineral Oil (Limited)	3	
8s. ... 9s. ... Young's Paraffin Light and Mineral Oil (Limited)	5s.	
	MISCELLANEOUS.	
50 ... 25 ... London & Glasgow Engineering & Iron Shipbuilding	19	
9s. ... Peruvian Nitrate (Limited)	7	
10 ... 10 ... Scottish Wagon Company (Limited)	12s.	
10 ... 4 ... Ditto New	96s.	
	OIL.	
10 ... 7 ... Dalmeny Oil (Limited)	11s. 6d.	
10 ... 10 ... Uphill Mineral Oil (Limited)	3	
8s. ... Young's Paraffin Light and Mineral Oil (Limited)	5s.	
	MISCELLANEOUS.	
50 ... 25 ... London & Glasgow Engineering & Iron Shipbuilding	19	
9s. ... Peruvian Nitrate (Limited)	7	
10 ... 10 ... Scottish Wagon Company (Limited)	12s.	
10 ... 4 ... Ditto New	96s.	

JULY 24, 1875.

## THE MINING JOURNAL.

809

## FLINTSHIRE.

**SALE OF THE LEESWOOD HILL COLLIERY,** at PONTBLYDDYN, near MOLD, and close to the Coed Talon Branch of the Chester and Mold Railway. **M. R. THOMAS DEAN** begs to announce that he has been instructed by the Mortgagor in possession to SELL, BY AUCTION, at the Black Lion Hotel, in the town of Mold, on Monday, the 2nd day of August, 1875, at Three for Four o'clock in the afternoon prompt, in One Lot, subject to conditions to be then produced, the Lessee's Interest in all that MINERAL PROPERTY known as the

## LEESWOOD HILL COLLIERY.

Comprising the seams of coal, cannel coal, shale, and ironstone under 43A. 2R. 31P. of land, or thereabouts, situated in the township of Leeswood, and held under three several leases, for terms of which as to 37A. 1R. 24P. about 19 years are unexpired, and as to the remaining 6A. 0R. 37P. about five years are unexpired (but the lease is renewable), at minimum dead rents, amounting together to £145 per annum, re-coupable from footage rents and royalties, and comprising also the lessee's interest in the Machine House, Office, Cottage, and Premises adjoining the North Wales Refinery, and held under a lease for a term, of which about 19 years are unexpired, at a rent of £18 per annum, together with the whole of the valuable ENGINES, PLANT, and MACHINERY belonging to the colliery, and the siding and tramways connecting it with the Coed Talon Branch of the Chester and Mold Railway, a schedule of which will be produced at the time of sale.

This colliery is most advantageously situated, both for land and railway sales. A considerable sum has been expended in proving and opening out the mines. Seams of coal and Cannel have been proved and worked, and valuable beds of very superior clay are known to exist on the estate. A moderate amount of capital only is required to develop the property.

For further particulars apply to Messrs. KELLY, KEENE, and ROPER, Solicitors, Mold; or to the Auctioneer, Mold.

## HENDON SPelter WORKS COMPANY.

TO CAPITALISTS, PROMOTERS OF PUBLIC COMPANIES, & OTHERS. **FOR SALE**, in consequence of the Death of the late Senior Partner, the SPelter WORKS, situated at Hendon, in the borough of Sunderland, in the county of Durham, now being carried on under the style of "THE HENDON SPelter COMPANY."

The works are situated within one mile of the well-known docks of the port of Sunderland, and adjoining the Hartlepool Branch of the North Eastern Railway, with which they are connected by high and low level sidings, and thereby placed in communication with all parts of the United Kingdom. Their position, within easy distance of both the ports of Newcastle and Sunderland, is very advantageous for the cheap importation of raw material, as also the forwarding of the manufactured article either by land or sea.

The ground on which the works are built could be either bought out or sold on a yearly perpetual ground rent, and any quantity under 20 acres could be included in the sale.

Being situated in the midst of the Durham Coal Field fuel of the best description can be obtained at a cost below almost any other part of the United Kingdom.

There are 19 workmen's cottages, which could be sold with the works.

The works contain 24 zinc furnaces, capable of producing 70 tons of metal a week, as also calciners, potlofts, machinery, blacksmiths' and joiners' shops, &c., of sufficient capacity for a much larger number. The works could, therefore, be doubled at a comparatively small cost.

The quality of the metal made at these works is well known, and it, therefore, commands a ready sale at the highest prices.

Attached to the high level sidings are large depots for coal, ore, &c.

The goodwill would, of course, go with the works, and they will be sold subject to all stock being taken at a fair market value.

The purchaser can also have the option of buying the CALCINING WORKS and VALUABLE MINES in SPAIN, thus allowing of the economical and regular supply of the raw material, and saving the mineowners' and merchants' profits.

As the ore from the South of Spain generally comes as ballast for ships laden with esparto, it has been brought for this company at an average cost of 7s. per ton, sometimes as low as 4s. 6d.

Further particulars can be had on application to the company.

## VALUABLE MINING PROPERTY.

## THE WELL-KNOWN CONISTON AND TILBERTHWAITE COPPER MINES IN NORTH LANCASHIRE.

**T. M. FISHER, SONS, AND CO.** are instructed TO SELL, as a GOING CONCERN, at the Clarence Hotel, Spring Gardens, Manchester, on Tuesday, the 3rd August, 1875, at Four for Five o'clock in the afternoon, in One or more Lots, as may be decided upon, subject to conditions of sale to be then produced, all those valuable and extensive MINING PROPERTIES, known as the CONISTON AND TILBERTHWAITE COPPER MINES.

THE FREEHOLD BUILDINGS AT CONISTON comprise FORTY-ONE NEW HOUSES (with outbuildings and gardens), in four blocks, pleasantly situated in the village, and near the railway station.

The LEASEHOLD BUILDINGS, which are at the Mines, include THIRTEEN COTTAGES, complete Suite of Offices, Board and Managers' Rooms, Pay Offices, Changing Rooms, Cooking Kitchens, Powder Magazine, Storehouses for Material and Dressed Copper, large Smiths' Shop, fitted with seven hearths, Carpenters' Shop and Saw Mill, Stables, Mill-houses, and large sheds for stamps and jigger machines, and several ranges of shodding for sorters and dressers.

The Coniston Station is situated about three-quarters of a mile from the principal dressing-rooms, and at the terminus of the Coniston branch of the Furness Railway, with sheds for unloading the ore, large sampling floors, and platform over siding for loading several trucks, office, &c.

The PLANT includes THIRTEEN large overshot WATER WHEELS, varying from 12 to 45 ft. diameter, THREE small WATER WHEELS, Crushing Mills, Screens and Elevators, Jigging Machines, Stamping Mills, Tramways and Hoists, Iron Wagons, Cars, &c.

The Coniston mining set is about three miles square, the lodes are numerous and well defined, and as the present workings have been confined to three or four lodes, a large part of the set is undeveloped. The mines are now in partial work only, and the present returns average about 100 tons of ore per month.

The water power is almost unlimited, as a level has been driven into a mountain tarn of about 45 acres area, calle i' Lever's Water, from which, in addition to the mountain streams, a large supply of water is drawn. No steam power is required, and the only coils used are at the smiths' shops.

The present lease of the Coniston set expries in 1880. The royalty is 1-18th, without any surface rent, and a renewal of the lease on the same terms can be obtained.

Tilberthwaite Mines comprise a large area, adjoining Coniston. The deep level is driven 1080 yards, and unwaters a large district; the lodes are only partially opened on. There is a large vein of slate rock of good quality near the level mouth, for which offers to work have recently been made and the supply of water is most ample. These mines are held on lease, of which ten years are unexpired, at a minimum rent of £20, merging in a royalty of 1-18th.

The buildings on the Tilberthwaite Mines are Mill House, Smiths' Shop, Copper Shed, and sheding for sorters, &c.; and the PLANT embraces TWO large WATER WHEELS, 12 and 32 ft. diameter, new Crushing Mill, with revolving Screens and Elevators, Jigging Machines, Iron Wagons, &c.

The mines have been worked for many years by an ordinary trading partnership, and have paid large profits. They are now offered for sale in consequence of the advanced age of some of the partners, and of the decease of others, whose representatives are not in a position to expend the necessary capital for further developing the mines, and providing the requisite additional machinery for economically working the same. A very considerable sum has been laid out in opening the mines, of which the purchaser would reap the advantage.

The rental of the house and cottage property is about £250. The mines, plants, and property can be inspected on application to Mr. BENNETT JOHNS, or to Capt. BAWDEN, at the offices on the Mines; and any further particulars and information, with catalogue of machinery and plant, may be obtained in London at the MINING JOURNAL Office, 26, Fleet-street; and from Messrs. THOMAS BREALEY and SON, Surveyors, Leek; the Auctioneers, 29, Blackfriars-street, Manchester; or HARRY AINSOLD, Esq., Kendal.

## MOLD, FLINTSHIRE.

**Sale of the INTEREST of the MOLD MINES (LIMITED),** as Lessees in the well-known MOLD LEAD MINES, situated at Cat Hole and Gwernymynydd, near to the town of MOLD, together with the WHOLE of the very VALUABLE ENGINES, PLANT, and MACHINERY belonging thereto.

**M. R. CHURTON, ELPHICK, AND CO.** beg to announce that they have been favoured with instructions from the directors of the Mold, on Wednesday, the 4th day of August, 1875, at Two for a quarter past Two o'clock in the afternoon, prompt, in One Lot, and subject to conditions to be then produced, the

**INTEREST OF THE MOLD MINES (LIMITED),** Of and in their TAKE of LEAD, LEAD ORE, and matters wherewith to make lead in and under a considerable tract of land of nearly 1½ mile in length, as in the ENGINE HOUSES, OFFICES, BUILDINGS, SHAFTS, and LEVELS thereon and therein, together with the whole of the extremely valuable PLANT and MACHINERY belonging to the mines, comprising an 85 inch beam PUMPING ENGINE on the Cornish principle, with 22 and 24 inch pumps, and pumping pit work 200 yards deep, 18 inch horizontal WINDING ENGINE, with link motion; donkey engine, crushing mill, jiggling machines, water wheel, weighing machines, capstans, pit head, wire and other ropes, and a considerable number of other mining articles, the whole being in first-rate condition.

These mines which are held by the company at low royalties and free of dead rent, under an agreement for a lease from the Lords of Mold for a period of 21 years from the 25th of March, 1870, consist of a fine range of lead mines, within 2 miles of Mold, and are respectively known as Cathole, Pilkington, Deborah, and Gwernymynydd, and they have the reputation of being one of the richest fields of mineral wealth in the Principality of Wales.

Upwards of £30,000 have within the last few years been spent in opening out two of the mines and on the plant and buildings at the western portion of the property.

The mines are well known to, and have at various times been reported on by, Mr. J. Darlington, of the Minera Mines, Mr. Edward Hull, F.G.S., of the Geological Survey of Great Britain, Messrs. Woodhouse and Jeffcock, Mr. Arthur Waters, late Mr. Robert Williams, who was agent to the Lords of Mold, and they all concur in regarding this as an exceedingly valuable property.

Further particulars can be had on application to Messrs. KELLY, KEENE, and ROPER, Solicitors, Mold, where also a plan of the estate, and a schedule of the Mining Surveyor's reports can be inspected at the offices of Messrs. CHALLINOR and CO., Solicitors, Leek; and full information can be obtained from Mr. R. STEELE, of Hanley, Mining Surveyor; or on application to Mr. A. BOUTLON, 140 Waterloo Road, Burslem; or to Messrs. CHALLINOR; or Mr. SHAW, Solicitor, Leek.

**TO BE SOLD,** a valuable FREEHOLD MINING PROPERTY in CARMARTHENSHIRE. The estate contains SEVERAL FARMS, comprising in all about FOUR HUNDRED ACRES, the whole under-run with veins of the best anthracite coal, iron ore, fire-clay, &c., all of which have been proved, and are now being worked on adjoining properties. A portion only of the freehold, Strand, W.C.

For particulars, apply to Mr. W. W. GWYTHIAN, Surveyor, 12, Beaumont Build-

In the Court of the Vice-Warden of the Stannaries.  
Stannaries of Cornwall.

**I**N the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the SOUTH PHENIX TIN AND COPPER MINING COMPANY (LIMITED).—The Vice-Warden has, by an Order made in the above Matter, bearing date the 21st day of July instant, appointed CHARLES WILLIAM CLINTON, of Truro, within the said Stannaries, an Officer of the said Court, to be absolutely the OFFICIAL LIQUIDATOR of the above-named company.

FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, July 22nd, 1875.

In the Court of the Vice-Warden of the Stannaries.  
Stannaries of Cornwall.

**I**N the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the SOUTH PHENIX TIN AND COPPER MINING COMPANY (LIMITED).—Notice is hereby given, that ALL CREDITORS of the above-named company are required, on or before the 31st day of July instant, to SEND IN their NA'ES and ADDRESSES, and the AMOUNTS and particulars of their SEVERAL CLAIMS, to CHARLES WILLIAM CLINTON, the Official Liquidator of the said company, at the Stannaries Court Office, in Truro, within the said Stannaries.

FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, July 22nd, 1875.

In the Court of the Vice-Warden of the Stannaries.  
Stannaries of Cornwall.

**I**N the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the ST. JUST AMALGAMATED MINING COMPANY (LIMITED).—TO BE SOLD, under the direction of the Registrar of the said Court, on Monday, the 2nd day of August next, at Twelve o'clock noon, at the ST. JUST AMALGAMATED MINES, in the parish of ST. JUST-IN-PENWICH, within the said Stannaries, subject to such conditions as shall be then and there produced, all the interest of the said company of and in the several SETTS under which its mining operations have been carried on, together with the undemanded mining

PLANT, MACHINERY, MATERIALS, AND EFFECTS,

including from 8 to 10 tons of TIN ORES on the floors belonging to the said company, and being within and upon the said mine:

36-in. CYLINDER ROTARY ENGINE, 9-ft. stroke, with fly-wheel and three 10-ton BOILERS;

40-in. CYLINDER PUMPING-ENGINE, with one 10-ton BOILER;

24-in. CYLINDER STEAM-WHIM, 6-ft. stroke, with fly-wheel, and cage, and 7-ton BOILER;

26-in. STEAM-WHIM, with fly-wheel, and cage, and 10-ton BOILER;

BALANCE-BOBS, two 16-inch iron axles, with drivers, &c., complete; two other 16-inch iron axles, with drivers, &c.; several fathoms of railroad with stands; three 4-in. pumps, matching, and pipes; crab winch, 300 fms. 2½ wire-rope, wood passes, and railroad behind stamps.

DRESSING FLOORS.—Four Borlase's buddles, with water-wheel and driving gear complete; four ditto, ditto, without stands, with water-wheel and driving gear complete; wood dressing-house, kieves and tubs, iron pipes and woodwork conveying stuff from top floors.

LEAVINGS FLOORS.—Wood house, hand frames and pits, Borlase's bundle and small water-wheel, wool roof over frames, trunks and water-wheel, carpenters' shop, flat-thread screw, new launders.

SAMPLING HOUSE.—Railroad and stands, tram wagons, shaft tackle, shovels and landing brace, winch and stand, chain, pulley-stands, Bartlett's weighbridge, dry dry, miners' skips, horse-whims, kibbles, dial.

SMITHS' SHOP.—Two bellows, anvils, cast-steel, old steel, miners' tools, new bar and faggotted iron, smiths' tools, old iron, brass.

PITWORK, UNDERGROUND.—Savealls' Shaft: House lift, 30 fms. 9-in. plunger-lift, 36-in. ditto, 22 fms. 5½-in. ditto, 53 fms. 4-in. ditto, 2 fms. 3½-in. ditto, 10-ton BOILER; 40-in. cylinder PUMPING-ENGINE, with one 10-ton BOILER;

Balance-bobs, two 16-inch iron axles, with drivers, &c., complete; two other 16-inch iron axles, with drivers, &c.; several fathoms of railroad with stands; three 4-in. pumps, matching, and pipes; crab winch, 300 fms. 2½ wire-rope, wood passes, and railroad behind stamps.

DRESSING FLOORS.—Four Borlase's buddles, with water-wheel and driving gear complete; four ditto, ditto, without stands, with water-wheel and driving gear complete; wood dressing-house, kieves and tubs, iron pipes and woodwork conveying stuff from top floors.

LEAVINGS FLOORS.—Wood house, hand frames and pits, Borlase's bundle and small water-wheel, wool roof over frames, trunks and water-wheel, carpenters' shop, flat-thread screw, new launders.

SAMPLING HOUSE.—Railroad and stands, tram wagons, shaft tackle, shovels and landing brace, winch and stand, chain, pulley-stands, Bartlett's weighbridge, dry dry, miners' skips, horse-whims, kibbles, dial.

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LEAVINGS FLOORS.—Wood house, hand frames and pits, Borlase's bundle and small water-wheel, wool roof over frames, trunks and water-wheel, carpenters' shop, flat-thread screw, new launders.

SAMPLING HOUSE.—Railroad and stands, tram wagons, shaft tackle, shovels and landing brace, winch and stand, chain, pulley-stands, Bartlett's weighbridge, dry dry, miners' skips, horse-whims, kibbles, dial.

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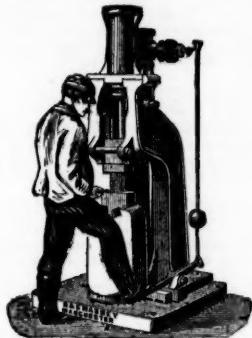
DRESSING FLOORS.—Four Borlase's buddles, with water-wheel and driving gear complete; four ditto, ditto, without stands, with water-wheel and driving gear complete; wood dressing-house, kieves and tubs, iron pipes and woodwork conveying stuff from top floors.

LEAVINGS FLOORS.—Wood house, hand frames and pits, Borlase's bundle and small water-wheel, wool roof over frames, trunks and water-wheel, carpenters' shop, flat-thread screw, new launders.

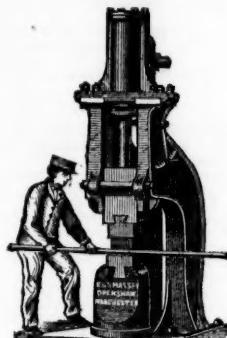
# B. & S. MASSEY, OPENSHAW, MANCHESTER.

PRIZE MEDALS AWARDED:—Paris, 1867 Havre, 1868 Highland Society, 1870; Liverpool, 1871; Moscow, 1872; Vienna, 1873.

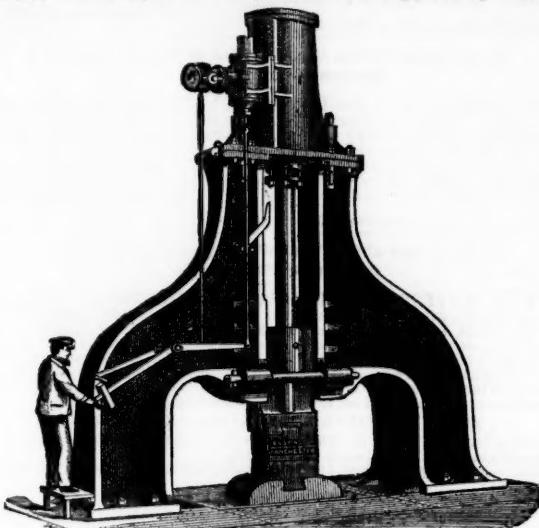
Patentees and Makers of Double and Single-acting STEAM HAMMERS of all sizes, from  $\frac{1}{2}$  cwt. to 20 tons, with self-acting or hand motions, in either case giving a perfectly DEAD BLOW, while the former may be worked by hand when desired. Large Hammers, with Improved Framing, in Cast or Wrought Iron. Small Hammers, working up to 500 blows per minute, in some cases being worked by the Foot of the Smith, and not requiring any separate Driver.



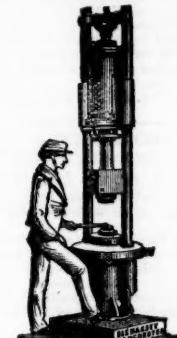
Small Hammer with Foot Motion.



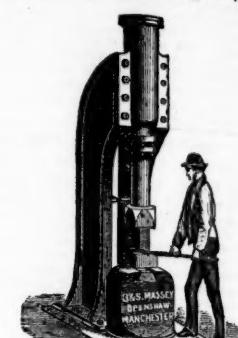
General Smithy Hammer.



Steam Hammer for Heavy Forging.



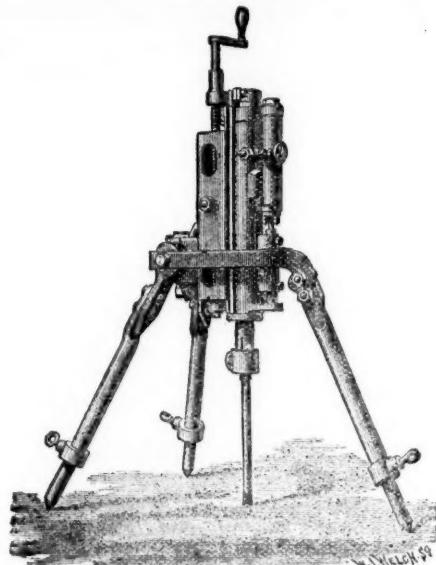
Special Steam Stamp.



General Smithy Hammer.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

THE "CHAMPION" ROCK BORER,  
For Tunnels, Mines, Quarries  
AND OTHER WORKS.



The "CHAMPION" Rock Borer has been designed after years of experience of other Rock Drills; it surpasses them in their good qualities, and avoids their imperfections, and while being of the very best make and material, it is absolutely the cheapest in the market.

Intending purchasers can satisfy themselves of the excellence of this Rock Borer by seeing it in actual operation.

ULLATHORNE & CO.,  
No. 56, METROPOLITAN BUILDINGS, QUEEN  
VICTORIA STREET, LONDON, E.C.

IMPORTANT TO COLLIERY OWNERS.  
PATENT STEAM PUMPS,  
Awarded the only

Prize Medal for  
Vertical Steam Pumps  
at the Pomona Show,  
Manchester, Nov., 1874.

FOR FORCING  
WATER OUT OF MINES,  
FEEDING BOILERS, AND  
ALL PUMPING PURPOSES.  
Prices and testimonials on application to

HULME & LUND,  
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WILBURN IRONWORKS,  
Wilburn-street, Regent-road,  
SALFORD, MANCHESTER.

THOMAS TURTON AND SONS,  
MANUFACTURERS OF  
CAST STEEL for PUNCHES, TAPS, and DIES;  
TURNING TOOLS, CHISELS, &c.  
CAST STEEL PISTON RODS, CRANK PINS, CON-  
NECTING RODS, STRAIGHT and CRANK  
AXLES, SHAFTS and  
FORGINGS of EVERY DESCRIPTION.

DOUBLESHEARSTEEL | FILES MARKED  
BLISTER STEEL, | T. TURTON  
SPRING STEEL, | EDGE TOOLS MARKED  
GERMAN STEEL, | WM. GREAVES & SON

Locomotive Engine, Railway Carriage and Wagon  
Springs and Buffers.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.  
LONDON WAREHOUSE, 36, QUEEN STREET, CANNON STREET, CITY, E.C.  
Where the largest stock of steel, files, tools, &c., may be selected from.

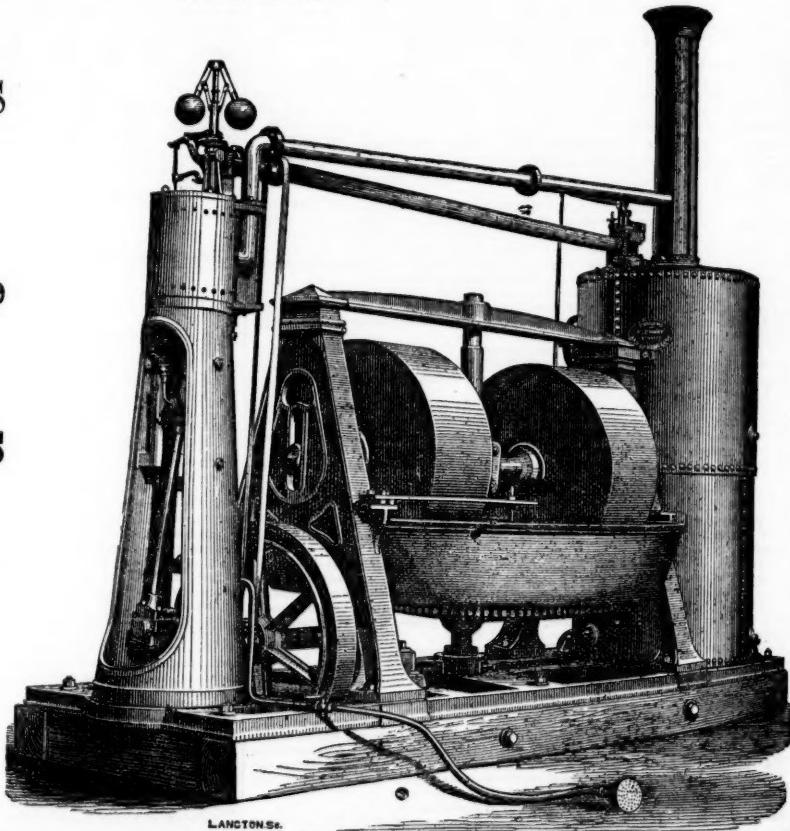
## BARROWS & STEWART, ENGINEERS, BANBURY,

MANUFACTURE

PORTABLE  
Steam Engines

With Gear for  
Winding,  
Pumping, and Ore  
Crushing.

ALSO,  
COMBINED MILLS  
and ENGINES,  
with or without  
BOILERS,  
for Grinding  
Cinders, Sand,  
Mortar, &c.



N. HOLMAN AND SONS,  
BRASS AND IRON FOUNDRIES AND ENGINE WORKS,  
PENZANCE AND ST. JUST, CORNWALL,  
Sole Makers of Stephens's Improved Patent Pulveriser,  
FOR REDUCING TIN ROUGHS, LEAD SKIMPINGS, AND OTHER ORES.

The advantages possessed by these machines over others are—

- 1.—THE CHEAPNESS.
- 2.—THE SIMPLICITY OF CONSTRUCTION.
- 3.—THE DURABILITY OF THE WEARING PARTS.
- 4.—THE QUANTITY OF STUFF PULVERISED.
- 5.—THE PERFECT MANNER IN WHICH IT IS DONE.
- 6.—THE SMALL AMOUNT OF POWER REQUIRED TO DRIVE THEM.

MACHINES MADE SPECIALLY FOR EXPORTATION.

For prices, testimonials, and further particulars, apply to N. H. and Sons, Sole Makers, at the above address, or to our London Agent below.

*N.B.—Any person or persons infringing on the patent or manufacture of these machines, or any part thereof, will be prosecuted under the Act.*

Estimates given for all classes of Mining Machinery, &c., for home and foreign supply.

ORDERS PROMPTLY ATTENDED TO.

London Agent—Mr. J. COATES, 33, Frederick Street, Gray's Inn Road, London, W.C.

## ST. LAWRENCE ROPEWORKS, NEWCASTLE-ON-TYNE. ESTABLISHED 1782.

THOMAS AND WILLIAM SMITH,

Manufacturers of all kinds of Iron, Steel, Copper, and Galvanised Wire Ropes, Hemp and Manilla Ropes, &c., Round and Flat Shaft Ropes, Crab Ropes, Guide Ropes, Hauling Ropes, and Galvanised Signal Strand, Ships' standing Rigging fitted complete, Patent Hemp and Manilla Hawser, Warps, Cordage, Spunyarn, &c., &c., Manilla Yarn for Telegraph Cables, &c., Flat Hemp Ropes for Driving Bands, Steel Plough Ropes, Fencing Wire and Strand, Lightning Conductors, &c.

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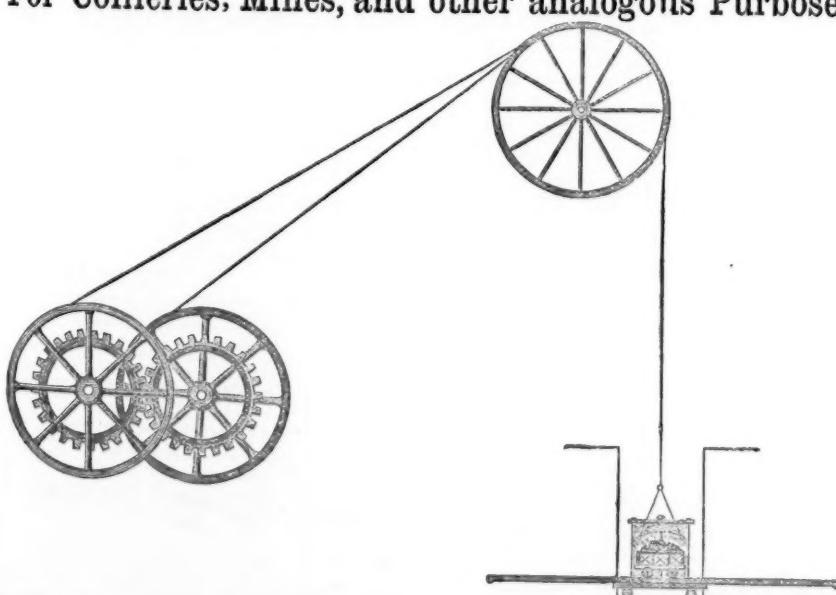
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The use of these Machines, while doing away with the greatest source of danger, economises at least Fifty per cent. of the labour required in Getting Coal.

Particulars on application to—

MARTIN MACDERMOTT,  
SCOTT'S CHAMBERS, PUDDING LANE, LONDON, E.C.

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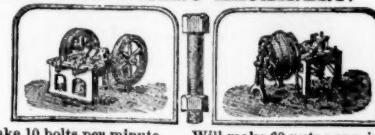
R. WILSON, PHOENIX WORKS, ROTHERHAM.  
Full particulars on application can be had as to terms, drawings, &c., &c.

PATENTEE.



PATENTEE.

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JULY 24, 1875.

## THE MINING SHARE LIST.

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid
15,000 Alderley Edge, c, Cheshire*	10 0 0	—	1%	% 1	12 6 8..	0 5 0..	Jan. 1875
30,000 Farnsfield, c, i, m., Devon*	1 0 0	—	1%	% 1	0 2 0..	0 2 0..	June 1873
6,000 Blaen Caelan, s-i, Cardigan* (24 sh.)	3 10 0	—	—	—	0 10 9..	—	—
200 Bettalack, t, c, St. Just*	116 5 0	47½	40 45	619 15 0..	5 0 0..	0 Aug. 1872	
10,000 Bronfloyd, * s-i, Cardigan	1 7 6	—	—	—	2 2 0..	0 0..	Jan. 1872
4,000 Brookwood, c, Buckfastleigh	1 16 0	4	4 4½	3 10 6..	0 0..	July 1875	
3,245 Cargill, s-i, Newlyn*	5 7 0	1	% 1	4 16 3..	0 12 6..	Oct. 1872	
6,000 Cashwell, t, Cumberland*	2 10 0	—	—	—	1 6 6..	0 2 0..	Aug. 1873
1,000 Carn Brae, t, Illogan	35 0 0	36½	38 35	308 0 0..	1 0..	Feb. 1874	
6,000 Cath, Jane, t, Penrhynedraeth	5 0 0	—	—	—	0 7 6..	0 7 6..	June 1873
2,450 Cook's Kitchen, t, Illogan*	20 19 9	4%	4 4½	11 17 0..	0 7 6..	Jan. 1873	
10,240 Devon St. Consols, c, Tavistock*	1 0 0	3	2 2 3	116 10 0..	0 12 0..	May 1872	
4,296 Dolcoath, t, c, Camborne	10 14 10	40	38 40	106 18 0..	0 10 0..	June 1875	
6,000 Drake Walls, t, c, Calstock	6 0 0	—	—	—	0 2 0..	0 2 0..	July 1874
10,000 East Balleswielden, t, Sancroft*	1 0 0	—	—	—	0 2 11 0..	0 5..	Feb. 1874
6,144 East Caradon, c, St. Cleer*	2 14 6	1%	% 1	14 19 0..	0 2 0..	Oct. 1872	
800 East Darren, t, Cardiganshire	32 0 0	—	—	—	228 10 0..	1 0..	May 1875
6,400 East Pool, t, Illogan	9 9 9	14%	13 14	13 13 9..	0 2 6..	July 1875	
1,906 East Wheal Lovell, t, Wendron*	5 19 0	—	—	—	20 7 6..	0 7 6..	Oct. 1874
2,800 Foxdale, t, Isle of Man*	25 0 0	—	—	—	80 15 0..	0 10 0..	Sept. 1872
4,000 Glasgow Carr., c* (30,000 £1 p., 10,000 15s. p.)	—	13%	13 13%	8 7 4..	0 6..	Jan. 1875	
15,000 Great Laxey, t, Isle of Man*	4 0 0	15	13 14 14%	18 3 0..	0 8 0..	July 1875	
25,000 Great West Van, t, Cardigan*	2 0 0	—	—	—	0 2 0..	0 1 0..	Aug. 1874
5,908 Great Wheal Vor, t, c, Helston*	40 15 0	—	—	—	16 19 6..	0 2 6..	June 1872
6,400 Green Hurth, t, Durham*	6 0 0	—	—	—	1 12 0..	0 4 0..	Oct. 1874
2,000 Grogwinion, t, Cardigan*	2 0 0	—	—	—	0 2 0..	0 1 4..	Dec. 1874
9,830 Gunnislake (Clitters'), t, c	5 5 0	—	13%	13 13%	0 7 3 0..	1 0..	June 1875
1,024 Herodfoot, t, near Liskeard*	8 10 0	—	3 3 3	62 5 0..	0 15 0..	Oct. 1872	
18,000 Hindington Down, c, Calstock* (1 £1 sh.)	2 5 0	13%	13 13%	4 8 0..	0 5 0..	Dec. 1872	
2,500 Kilaloe, t, Tipperary	1 0 0	—	—	—	0 3 11 0..	0 6..	Mar. 1873
400 Lisburne, t, Cardiganshire	18 15 0	—	—	—	587 10 0..	1 0..	July 1875
6,120 Lovell, t, Wendron	10 0 0	—	—	—	0 17 6..	0 1 0..	Jan. 1874
11,000 Melindur Valley, t, Wrexham*	3 0 0	—	3 2 3	0 7 2..	0 3 7..	Jan. 1875	
9,000 Minera Mining Co., c, l, Wrexham*	6 0 0	—	7 5 7	63 19 2..	0 2 0..	May 1875	
20,000 Mining Co. of Ireland, c, l*	7 0 0	—	—	—	0 8 0..	0 3 6..	July 1872
12,000 North Hendre, t, Wales	2 10 0	—	—	—	1 0 0..	0 2 0..	Apr. 1875
2,000 North Levant, t, St. Just*	12 2 0	3	2 2 3	4 13 0..	0 12 0..	Sept. 1873	
27,855 Old Treburret*, s-i, ordinary shares	1 0 0	—	—	—	0 9 0..	0 9 0..	Feb. 1874
9,258 Old Treburret*, s-i (10 per cent. pref.)	10 0 0	—	—	—	0 1 4 0..	0 6 0..	July 1874
5,694 Pean-an-drea, t, Redruth*	9 17 0	—	5 5 5	0 5 0..	0 5 0..	Nov. 1871	
5,000 Penhalls, t, St. Agnes	3 0 0	2	1 1 2	3 13 6..	0 2 0..	July 1875	
4,793 Penstruhul, t, c, Gwennap	2 0 0	—	3 2 3	0 2 0..	0 1 0..	Nov. 1874	
6,000 Phoenix, t, c, Linkinhorne*	4 13 4	—	3 2 3	39 19 10..	0 4 0..	Nov. 1872	
1,772 Polterro, t, St. Agnes	15 0 0	—	—	—	1 12 6..	0 5 0..	Mar. 1872
18,000 Prince Patrick, t, l, Holywell	1 0 0	—	—	—	0 11 6..	0 2 6..	July 1875
1,120 Providence, t, Lelant*	15 16 7	2	2 2 3	104 12 6..	0 10 0..	Sept. 1872	
12,000 Roman Gravels, t, Balco*	2 0 0	—	—	—	0 2 0..	0 2 0..	Sept. 1874
1,000 Sheldon, t, St. Austell	5 10 0	13	12 12%	4 19 0..	0 8 0..	May 1875	
512 South Caradon, t, St. Cleer	1 5 0	100	105 110	72 0 0..	0 1..	June 1875	
5,000 South Carn Brae, t, Illogan*	2 6 6	2	1 1 2	0 10 0..	0 2 6..	July 1872	
6,123 South Coudurrow, t, c, Camborne*	6 5 6	5	4 4 8	1 7 6..	0 5 0..	July 1875	
6,000 South Darren, t, Cardigan*	3 6 6	—	—	—	1 1 6..	0 1 6..	Nov. 1870
10,000 So. Pr. Patrick, t, l, Montgomery*	1 0 0	—	—	—	0 6 0..	0 2 0..	Apr. 1875
8,771 St. Just Amalgamated, t*	8 10 0	—	—	—	0 9 0..	0 4 0..	Nov. 1871
1,000 Tankerville, t, Salop*	6 0 0	11	10% 11	3 13 0..	0 5 0..	May 1875	
6,000 Tincroft, t, c, Pool, Illogan	9 0 0	—	18 19	48 3 6..	0 5 0..	May 1875	
1,000 Tretell, t, Bodmin	2 0 0	—	—	—	0 1 0..	0 1 0..	Mar. 1874
4,000 Trumpet Consols, t, Helston*	7 10 0	—	—	—	9 11 0..	0 10 0..	Nov. 1872
15,000 Van, t, Llanidloes*	4 5 0	25	24 26 xd	15 4 6..	0 13 0..	July 1875	
3,000 W. Chiverton, t, Perranzabuloe*	12 10 0	15%	15 17%	62 10 0..	0 5 0..	June 1874	
512 West Tolgas, t, Redruth	65 10 0	45	43 46	7 5 0..	1 0 0..	June 1875	
2,048 West Wheal Frances, t, Illogan	27 3 9	7	5 6 6	3 12 6..	0 5 0..	Oct. 1872	
512 Wheal Bassett, t, Illogan	5 2 6	5 5 6	688 10 0..	1 10 0..	0 Aug. 1875		
2,048 Wheal Jane, t, Kew	2 13 10	3 2 3	21 2 3	11 5 0..	0 5 0..	July 1875	
429 Wheal Kitty, t, St. Agnes	5 4 6	3 2 3	82 2 3..	0 10 0..	0 May 1872		
89 Wheal Margaret, t, Uny Lelant*	15 17 6	—	—	—	0 1 0..	0 1 0..	Dec. 1874
80 Wheal Owles, t, St. Just*	86 5 0	120	100 120	522 10 0..	0 4 0..	Aug. 1872	
12,000 Wheal Russell, t, Tavistock	1 0 0	—	—	—	0 1 0..	0 1 0..	Dec. 1874
10,000 Wheal Whisper, t, c, Warleggan*	1 0 0	—	—	—	0 1 0..	0 6 0..	May 1872
25,000 Wicklow, c, sul, t, Wicklow	2 10 0	—	—	—	52 9 0..	0 2 6..	Mar. 1875
10,000 Wye Valley, t, Montgomery*	3 0 0	—	3 2 3	3 2 3	0 3 0..	0 3 0..	Mar. 1873

## FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
25,500 Alamillos, t, Spain*	2 0 0	—	2 2 2	1 7 9..	0 2 0..
30,000 Almada and Tivito Consol., c*	1 0 0	—	—	—	Mar. 1875
20,000 Australian, c, South Australia*	7 7 6	2 2 2	1 7 9..	—	0 1 0..
4,000 Battle Mountain, c* (6540 part pd.)	5 0 0	—	—	—	0 10 0..
15,000 Birdseye Creek, g, California*	4 0 0	—	—	—	0 10 0..
6,000 Bensberg, t, Germany*	10 0 0	—	—	—	0 17 4..
12,320 Bessa Burra, t, Australia*	5 0 0	—	—	—	0 17 4..
20,000 Cape Copper Mining, t, So. Africa*	7 0 0	—	25	24 25%	0 10 0..
40,000 Cedar Creek, g, California*	8 0 0	—	—	—	0 14 0..
8,000 Central American Association*	8 0 0	—	1 1 2	5 0 0..	0